



## A Land-Grant University

*Fully accredited by the  
Southern Association of Colleges and Schools since 1922.*

*Auburn University is an equal opportunity educational institution.*

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### AUBURN UNIVERSITY BULLETIN

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## NOTE

The statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and Auburn University.

While the provisions of the bulletin will ordinarily be applied as stated, Auburn University reserves the right to change any provision listed in this bulletin, including but not limited to academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Office of the Registrar and/or the Office of the Dean. It is important that each student be aware of his or her individual responsibility to keep apprised of current graduation requirements for the student's respective degree program.

## CIVIL RIGHTS COMPLIANCE

Auburn University is an equal opportunity educational institution and students are admitted and treated without regard to race, sex, color, age, religion, national origin or handicap. The University is in compliance with the regulation of Title IX of the Education Amendments of 1972, Sections 503/504 of the Rehabilitation Act of 1973 and the Vietnam Era Veterans Readjustment Assistance Act.

If any student wishes to file a complaint covered by the above stated laws and rules and regulations pertaining thereto, that student should go to the Affirmative Action Office.

## EQUAL EMPLOYMENT OPPORTUNITIES

It is the policy of Auburn University to provide equal employment opportunities, including provisions for training for personnel mobility, for all individuals without regard to race, sex, age, religion, color, national origin or handicap.

# Board of Trustees

UNDER THE ORGANIC and statutory laws of Alabama, Auburn University is governed by a Board of Trustees consisting of one member from each congressional district, as these districts were constituted on January 1, 1961, an extra member from the congressional district in which the institution is located, and the Governor and State Superintendent of Education, who are members *ex officio*. The Governor is President. Trustees are appointed by the Governor, by and with the consent of the State Senate, and hold office for a term of twelve years, and until their successors are appointed and qualified. Members of the board receive no compensation. By executive order of the Governor in 1971, a non-voting student representative selected by the Student Senate serves as a member *ex officio*.

The Board of Trustees places administrative authority and responsibility in the hands of an administrative officer at Auburn University. The institution is grouped for administrative purposes into divisions, colleges and schools, and departments.

## MEMBERS EX OFFICIO

H. GUY HUNT, Governor of Alabama, President .....	Montgomery
WAYNE TEAGUE, State Superintendent of Education .....	Montgomery
Student Body Representative, non-voting .....	Main Campus
Student Body Representative, non-voting .....	Auburn University at Montgomery

## APPOINTED MEMBERS

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ROBERT E. LOWDER, Montgomery .....	Second Congressional District
JAMES T. TATUM, JR., Huntsville .....	Eighth Congressional District

### TERMS ENDING IN 1999

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BESSIE MAE HOLLOWAY, Prichard, .....	First Congressional District
JOHN V. DENSON, Opelika .....	Third Congressional District
EMORY O. CUNNINGHAM, Birmingham .....	Ninth Congressional District

### TERMS ENDING IN 2003

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CHARLES G. GLOVER, Cullman .....	Seventh Congressional District
JACK B. VENABLE, Tallassee .....	Fourth Congressional District

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*Chancellor, Auburn University at Montgomery*

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*Director, Athletics*

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*Assistant to the Board of Trustees & President*

GERALD S. LEISCHUCK, A.B., M.A., ED.D.  
*Secretary to the Board of Trustees  
& Executive Director, Planning & Analysis*

DEBRA A. ARMSTRONG - WRIGHT, B.A., M.ED., J.D.  
*Executive Director, Affirmative Action/Equal Employment Office*

THOMAS D. SAMFORD, III, A.B., J.D.  
*University General Counsel*

J. HERBERT WHITE, B.S.  
*Executive Director, University Relations*

E. HAMILTON WILSON, B.S.  
*Executive Director, Governmental Affairs*



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*Dean, College of Business*

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*Dean, College of Education*

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*Dean, College of Engineering*

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JUNE M. HENTON, B.S., M.S., PH.D.  
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DAVID R. HILEY, B.A., PH.D.  
*Acting Dean, College of Liberal Arts*

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*Dean, School of Nursing*

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*Dean, School of Pharmacy*

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*Dean, College of Sciences & Mathematics*

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*Associate Vice President for Academic Affairs and  
Dean, Graduate School*

LOWELL T. FROBISH, B.S., M.S., PH.D.  
*Director, Agricultural Experiment Station*

WILLIAM C. HIGHFILL, A.B., M.S., PH.D.  
*University Librarian*

EUGENE CLOTHIAUX, B.S., M.LITT., PH.D.  
*Chairman, General Faculty*

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UNIVERSITY CALENDAR  
1991-921991 Summer Quarter (46 class days)  
Eight-Week Term (36 class days)

- June 1 ..... Last day for completing applications for admission
- June 17 ..... Orientation for new students
- June 18 ..... Final Registration & Schedule Adjustment
- June 19 ..... Classes begin
- July 4-5 ..... Independence Day Holiday
- July 15-19 ..... \*Registration for Fall Quarter
- July 25 ..... Mid-Quarter
- Aug. 9 ..... Classes end for term
- Aug. 12-13 ..... Final Examinations for Term
- Aug. 23 ..... Classes end for Quarter
- Aug. 26-29 ..... Final Examinations for Quarter
- Aug. 30 ..... Graduation

## 1991 Fall Quarter (48 1/2 class days)

- Sept. 1 ..... Last day for completing applications for admission
- Sept. 24 ..... Orientation for new students
- Sept. 25 ..... Late Registration and Schedule Adjustment
- Sept. 26 ..... Classes begin
- Oct. 15 ..... General Faculty Meeting
- Oct. 22-Nov. 1 ..... \*Registration for Winter Quarter
- Oct. 30 ..... Mid-Quarter
- Nov. 27-Dec. 1 ..... Thanksgiving Holidays (Wednesday noon-Sunday)
- Dec. 5 ..... Classes end
- Dec. 6 ..... Dead Day
- Dec. 7, 9, 10, 11 ..... Final Examinations for Quarter
- Dec. 13 ..... Graduation

## 1992 Winter Quarter (47 class days)

- Dec. 10 ..... Last day for completing applications for admission
- Jan. 7 ..... Late Registration and Schedule Adjustment
- Jan. 8 ..... Classes begin
- Feb. 3-13 ..... \*Registration for Spring Quarter
- Feb. 11 ..... Mid-Quarter
- Mar. 12 ..... Classes end
- Mar. 13 ..... Dead Day
- Mar. 14, 16, 17, 18 ..... Final Examinations for Quarter
- Mar. 20 ..... Graduation

# 1992 Spring Quarter (47 class days)

Mar. 1 .....	Last day for completing applications for admission
Mar. 27 .....	Late Registration and Schedule Adjustment
Mar. 30 .....	Classes begin
Apr. 14 .....	General Faculty Meeting
Apr. 23-30 .....	*Registration for the Summer Quarter
Apr. 23-May 5 .....	*Registration for the Fall Quarter
May 1 .....	Mid-Quarter
June 2 .....	Classes end
June 3 .....	Dead Day
June 4, 5, 6, 8 .....	Final Examinations for Quarter
June 10 .....	Graduation

## \*\*1992 Summer Quarter (47 class days) Eight-Week Term (37 class days)

June 1 .....	Last day for completing applications for admission
June 16 .....	Orientation for new students
June 17 .....	Late Registration and Schedule Adjustment
June 18 .....	Classes begin
July 13-17 .....	*Registration for Fall Quarter
July 22 .....	Mid-Quarter
Aug. 7 .....	Classes end for Term
Aug. 10-11 .....	Final Examinations for Term
Aug. 21 .....	Classes end for Quarter
Aug. 24-27 .....	Final Examinations for Quarter
Aug. 28 .....	Graduation

NOTE: Registration schedules and fee bills will be mailed prior to the beginning of the Quarter.

\*The individual colleges/schools will publish the days of registration that will be utilized during the University registration period.

\*\*All dates in the Summer Quarter are tentative and are subject to final approval prior to 1992-93 catalog printing.

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# The University

AUBURN UNIVERSITY, chartered in 1856, is located in Auburn, Alabama and traces its beginning to the East Alabama Male College, a private liberal arts institution whose doors opened in 1859. From 1861 to 1866 the college was closed because of the Civil War. The college had begun an affiliation with the Methodist Church before the war. Due to financial straits, the church transferred legal control of the institution to the state in 1872, making it the first land-grant college in the South to be established separate from the state university. It thus became the Agricultural and Mechanical College of Alabama.

Women were admitted in 1892, and in 1899 the name again was changed, to the Alabama Polytechnic Institute. In 1960, the school acquired a more appropriate name, Auburn University, a title more in keeping with its location, size, and complexity. The institution has experienced its greatest growth since World War II, and today enrolls 21,537 students, the largest on-campus enrollment in the state. The majority are Alabama residents.

Auburn University at Montgomery was established as a separately administered branch campus in 1967. The institution has developed rapidly, especially since moving to a new 500-acre campus just east of Montgomery in 1971. The AUM enrollment now stands at 6,296.

## Statement of Role

Auburn University, Alabama's 1862 Land-Grant university, has a unique role in the state's total higher education enterprise, embracing and enhancing the interrelated functions of instruction, research and extension. In fulfillment of this mission, Auburn, in its 135-year history, has developed into a premier comprehensive university, offering outstanding, economically accessible instruction to its undergraduate, graduate and professional students, conducting research in an ever-expanding array of disciplines, and reaching a growing number of Alabamians through public service and extension programs.

By striving for excellence in all its activities, Auburn represents a major resource in the state's economic, social and cultural development. In recognition of obligations to society, instruction, research and extension programs are also sensitive to national and global concerns. The primary resource for realizing these goals, as at all great universities, is the faculty; and it is through systematic recruitment, assignment, development, recognition and compensation programs that Auburn nurtures such a prominent, highly productive professional staff.

## Instruction

Auburn offers the baccalaureate in nearly 150 areas that span the spectrum of disciplines, and provides the state's only publicly supported programs in many fields, including several in agriculture, forestry, architecture, building science, pharmacy and veterinary medicine. Other unusually strong academic areas include the Colleges of Liberal Arts, Sciences and Mathematics, Business, Education and Engineering. Through the years, ROTC programs at Auburn have been nationally prominent in providing leadership for the military. Auburn supports a comprehensive graduate school, providing master's level programs in 130 areas and the doctorate in 96 fields, many unique in Alabama. Traditionally strong graduate programs are found in agriculture and the biological and physical sciences, forestry, mathematics, engineering, education, the human sciences, pharmacy and veterinary medicine. While more recent in origin, excellent graduate offerings have emerged in the liberal arts, social sciences and business. As a comprehensive center for graduate education and research, Auburn has responsibility for developing its academic programs so as to adapt to changing requirements of a modern society.

While Auburn long has been widely recognized for its quality and diversity in undergraduate and first-professional offerings, more recently—and in relation to expanding research efforts—the scope of graduate degree programs has risen to prominence. Evidence of the university's emphasis upon graduate instruction is the projection that enrollments at that level will approximate 16-20 percent of all students by the year 2000. Particularly rapid growth will be observed in doctoral programs, and all programs with expanded research activity. Graduate-level enrollment growth will be felt especially in agriculture and the biological sciences, the physical sciences, engineering, education, business and the veterinary and pharmaceutical sciences. At the master's level, larger enrollments will be seen in the social sciences, liberal arts, education, business, human sciences and professional programs.

The liberal arts and sciences, at the heart of Auburn's undergraduate instruction, today form the foundation upon which all professional and career programs are built. A core curriculum, with the goal of providing a common set of experiences for all undergraduates, has always been a prominent Auburn characteristic. Periodically, this set of courses is examined, with the goal of maintaining relevance and the value to the students and their future careers.

Auburn strives continuously to provide the highest possible quality in all its academic programs, and has become recognized nationally as an institution delivering high quality instruction at nominal cost. Given the diversity of offerings and the magnitude of the enterprise, a variety of teaching approaches is employed, styling instructional methodology to the nature of program content. Increasingly, modern electronic technology is employed to provide experiences that will benefit the graduate. Because of high academic aptitudes of incoming students, accelerated learning opportunities are important components of instructional programs.

## Research

Research, always a central element of Auburn's mission, has reached maturity in recent years. Auburn routinely ranks among the nation's top universities in various categories of research expenditure, and is Alabama's only Research University, as categorized by the Carnegie Foundation. Because of statutory responsibilities in the agricultural-natural resources-biological sciences arena, these programs always will represent a major focus of research emphasis at Auburn; however, long-term commitment to engineering and the physical sciences has made these disciplines primary research concentrations. Growing research programming in education, veterinary medicine, pharmacy, the liberal arts and human sciences are receiving added attention and will become more visible. Finally, programs in business, architecture and design and nursing are undertaking efforts to expand research capability.

Space limitations preclude effective identification of all major research thrusts; however, outstanding results are being realized in aquaculture research, the Space Power Institute, the Microelectronic Center, the National Center for Asphalt Technology, the Agricultural Experiment Station, forestry research, the Engineering Experiment Station, pulp and paper research, advanced manufacturing technology and the molecular genetics research program. Evidence of the impact of research results upon Alabama's agricultural, forestry and other industries abounds.

Auburn's research endeavor is diverse and comprehensive, at once focusing both upon developing solutions to major problems confronting humankind and expanding the universe of knowledge. Research attention might be as practical as increasing the margin of profit of the producer, or as theoretical as interpreting ancient manuscripts. All of this together produces an environment enhancing the state's economic, cultural, social and intellectual development and, at the same time, undergirding the university's undergraduate, graduate and extension programs.

## Extension

The third branch of Auburn's triangular mission is public service and extension. Rooted in the Alabama Cooperative Extension Service (ACES), and beginning in 1914, extension has emerged as a comprehensive, multi-disciplinary priority. In addition to statutory mandate for the statewide ACES activity, Auburn, as Alabama's major Land-Grant center, bears responsibility for extending expertise to all segments of the state's population. Accordingly, extension programming today spans the gamut from arts and humanities opportunities to professional renewal for veterinarians and pharmacists. Symbolic of Auburn's long-term commitment to public service are three recent developments: (1) one of three functional area vice presidents is the Vice President for Extension; (2) a new 250-room hotel with adjoining continuing education center was constructed on campus to further expedite extension programming; and (3) a satellite uplink facility is being constructed to provide rapid transfer of technological and educational resources throughout Alabama.

Diverse ACES programming will remain a priority; however, because of expertise found at Auburn, programs in engineering, education, business, governmental services, architecture, pharmacy and veterinary medicine also will continue to have major roles in the public service enterprise. In short, all instructional units of the university bear responsibility for assisting in the transfer of knowledge through extension programming.

Evidence prevails that these efforts have a lasting impact upon the quality of life for individuals and communities, the effectiveness of industrial and transportation systems, the efficiency of agricultural productivity, the improvement of educational programs, the currency of professionals of all types and the cultural and civic literacy of the state's citizens. Auburn boldly wears the mantle of providing lifelong learning to all Alabamians.

## **Purpose of the University**

Based on its Statement of Role, Auburn University is dedicated to these purposes which have been approved by the faculty and the Board of Trustees:

**Providing for its students, a broad general education, enhancement of personal and intellectual development, and specialized education through the University's undergraduate, professional, and graduate programs;**

**Preparing graduates whose knowledge, intellectual discipline, and experience in the multiple aspects of our culture will be manifest in service to the people in this state, the nation, and the world;**

**Conducting a broad program of research, both basic and applied, to stimulate the faculty and students in the quest for knowledge, to promote their intellectual growth and development, to broaden the foundations of knowledge, to increase understanding of our world, and to aid society in resolving its scientific, technological, economic, and social problems.**

**Creating and implementing effective programs of education and service that will provide special assistance throughout the state and the nation through the extension of the scientific, professional, and cultural resources of the University to individuals, communities, institutions, and industries, thereby contributing to an improved technology, better environmental and health conditions, enhancement of the general quality of life, and the development of a more responsible citizenry;**

**Fulfilling the University's responsibilities for instruction, research, and service in science and technology, including agriculture and engineering and programs in biological sciences, mathematics, physical sciences, social sciences, and statutory mandate for the Alabama Agricultural Experiment Station and the Alabama Cooperative Extension Service;**

**Encouraging scholarly and creative efforts in the arts and humanities so that the University may serve its students and the larger community as a vital source of general education and cultural enlightenment and as a stimulus toward participation of an educated citizenry in all avenues of life;**

**Fostering programs of education and research in those professional curricula uniquely or traditionally associated with Auburn University.**

Auburn University is committed to reassessing its objectives and programs continually in order to assure their consistency with new knowledge and changing economic and social conditions and to seek more efficient and imaginative means of fulfilling the University's purposes.







Applicants are required to present scores from either the American College Test (ACT) or the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. High school students may secure application forms from their principals or counselors. Scores on these tests are used as a partial basis for admission, for placement in English, chemistry, and mathematics, and for awarding University scholarships and loans.

Applicants whose native language is not English may be required to demonstrate proficiency in English.

Applicants of mature age who are not high school graduates may be considered for admission if their educational attainments - through testing - are shown to be equivalent to those of a high school graduate. The tests used include the USAFI General Educational Development Test, the American College Test and/or other tests recommended by the Admissions Committee. Applicants from nonaccredited high schools will be considered on an individual basis by the Committee.

**Early Admission** - Students of high academic promise may be admitted directly from the eleventh grade without a diploma. Basic requirements for early admission include:

1. Proper personal qualifications.
2. Superior competence and preparation, evidenced by the high school record and college aptitude test scores (ACT, SAT or other tests prescribed by the University Admissions Committee).
3. A letter from the high school principal assessing the applicant's emotional and social maturity, and readiness for college work.

Additional information on procedure is available at the Admissions Office.

**Advanced Standing** - Students with superior preparation may be placed in advanced programs suited to their ability and academic background. Individuals with special competence may qualify for advanced placement or credit on the basis of high school grades, scores on college ability or achievement tests, the College Level Examination Program (CLEP) tests, proficiency tests, and military courses. See Advanced Standing.

## Admission of Transfer Students

A satisfactory citizenship record, an minimum 2.5 cumulative grade-point average on a 4.0 scale on all college work attempted, and eligibility to re-enter the institution last attended are required for transfer admission. Transfer applicants who were not eligible for admission to Auburn when they graduated from high school must present a minimum of 48 quarter hours or 32 semester hours of college credit. All transfer students who have attempted 48 quarter hours of college work must have earned a cumulative 2.5 grade-point average in at least 30 credit hours of standard academic courses as required in Auburn University's Liberal Education Program (Core Curriculum). These 30 credit hours must include at least three quarter hours in each of the following areas:

- English (college-level composition or literature)
- History
- Mathematics (college level algebra or higher)
- Natural Science with a laboratory

Transfer applicants to Architecture, Engineering, Interior Design, Landscape Architecture, and Building Science must meet higher admission standards. The College of Engineering limits enrollment of students to its various curricula. In addition to the minimal criteria, students must be recommended by the Curriculum Admissions Committee. The criteria include an overall average of 2.8 and the completion of the first mathematics course listed in the chosen curriculum with a grade of C or better.

Entrance examinations may be required of applicants transferring from colleges with which the University has had little or no experience.

**Transfer Credit** - The amount of transfer credit and advanced standing allowed will be determined by the appropriate dean and the registrar. The dean will determine acceptance of D grades; credit in freshman English is allowed only on grades of C or better. The maximum credit allowed for work completed in a junior college will not exceed the number of hours required in the first two years of the student's curriculum at Auburn.

Students transferring from unaccredited institutions or programs may be granted provisional credit. When such credit is allowed, the final amount of credit will be determined upon completion by the student of one year of coursework at Auburn University. If a C average is not achieved, the amount of credit will be reduced in proportion to the number of hours in which the student fails to earn a C average or better.

## Transfer Within the System

Auburn University maintains a campus at Montgomery, Alabama. An undergraduate enrolled at either of Auburn's campuses who wishes to transfer to the other campus will be considered as a transfer student from any other accredited college. Because there is a slight difference between some curricula and courses at the two institutions, transfer credit and advanced standing will be determined by the academic unit and the registrar at the campus to which the student is moving.

## Admission of Transient Students

A student in good standing in an accredited college may be admitted to the University as a transient student when faculty and facilities are available.

To be eligible for consideration, an applicant must submit an application, an acceptable medical report and a letter of good standing bearing the signature of the dean or registrar of the college in which the applicant is currently enrolled.

Permission to enroll is granted for one quarter only; a transient student who wishes to re-enroll must submit a new application. Transient status does not constitute admission or matriculation as a degree candidate. The transient is, however, subject to the same fees and regulations as a regular student except for the continuation-in-residence requirements.

## Admission of Unclassified Students

Admission to most undergraduate programs as an Unclassified Student may be granted on the basis of the bachelor's degree from an accredited college. Unclassified Students in Engineering must also meet the grade-point-average specified for Engineering transfer students. Unclassified students must submit the same admissions credentials as transfer applicants.

## Admission of Special Students

Persons who do not meet general admission requirements for freshmen, but who are judged to have potential for success may be approved for special admission. An individual interested in admission as a special student should contact the Admissions Office.

## Admission of International Students

The University welcomes admission inquiries from international students. Because of limited facilities, however, only those students who are academically strong will be given serious consideration for admission. Also, the international student should be proficient in English. In all cases, English proficiency is determined by satisfactory results on the Test of English as a Foreign Language (TOEFL), offered by the Educational Testing Service, Box 899, Princeton, N.J., 08540, U.S.A. The student must submit satisfactory results on the Scholastic Aptitude Test of the College Entrance Examination Board, also offered by the Educational Testing Service.

International students first should send all of their academic credentials to the Admissions Office for evaluation. If they appear to be qualified, and show promise of success in their chosen fields of study, they will then be asked to make formal application. The application must be accompanied by an application fee of \$15 (not refundable). If the applicants present satisfactory academic credentials, test results, and evidence that they have sufficient funds to meet their college expenses (there is no financial assistance for undergraduate international students), they will then be sent an acceptance and the form I-20, the authorization for a student visa. All international students are required to subscribe to Plan II of the student insurance plan or provide evidence of equivalent coverage. Information about student insurance is available at the Drake Student Health Center. For further information, prospective students should write to the Admissions Office, Auburn University, Alabama 36849-5145, U.S.A.

## Admission of Auditors

When faculty and facilities are available, an individual who does not seek admission for course credit may audit a lecture course or the lecture portion of a course upon approval by the Admissions Office, the dean, and the head of the department involved. A formal application must be filed, but the \$15 application fee and the physical examination report are not required.

## Admission to Graduate Standing

Admission to graduate standing is granted only by the University Graduate School. A \$15 application fee is required. A bachelor's degree or equivalent from an accredited college or university and submission of satisfactory scores on the General Test of the Graduate Record Examinations (GRE) are required for Graduate School admission in all departments except Business. Applicants in Business must submit satisfactory scores on the Graduate Management Admission Test (GMAT). Certain departments require applicants for master's degree programs to take the GRE Subject Test. Applicants for admission to doctoral programs in some departments must submit GRE Subject Test Scores also.

The undergraduate preparation of each applicant must also satisfy the requirements of a screening committee of the school or department in which the student plans to major. A student in good standing in a recognized graduate school who wishes to enroll in summer session, off-campus workshop, or short session, and who plans to return to his former college, may be admitted as a graduate transient. For further information, see the section on the Graduate School and also the *Graduate School Bulletin*.

## Readmission

Students who have previously attended Auburn and who wish to re-enter must secure a registration permit from the Registrar's Office. Former students who have attended another college for at least one quarter or semester must be eligible to re-enter that institution, if they desire to return to Auburn. Students who attended another institution for more than one quarter must have earned an overall C average or better since last attending Auburn to be eligible to re-enter Auburn. Two transcripts from the institution attended must be supplied to the Registrar.

## Pre-College Counseling

In order to help entering freshmen choose fields of study, and to adjust to their first quarter at the University, Auburn provides pre-college counseling.

Freshmen entering Fall Quarter attend counseling sessions on campus during the summer prior to entrance. In these sessions, students meet faculty members, administrators, and student leaders, and plan with their advisors a schedule of their first quarter of college work.

Freshmen entering the University any quarter other than Fall Quarter are usually required to report to campus one day early for counseling.

Transfer students may meet with advisors during the regular pre-registration period for the quarter in which they plan to enroll. Transfers will plan their schedules after their transcripts have been evaluated. A convocation for all new students is held on the first day of registration prior to the beginning of classes.

## Policy On Accommodation For Disabled

It is the policy of Auburn University to provide accessibility to its programs and activities and reasonable accommodation for persons defined as handicapped under Section 504 of the Rehabilitation Act of 1973, as amended.

Students with disabilities desiring additional information should contact the Department of Rehabilitation and Special Education, 1234 Haley Center, (205) 844-5943.

## Alabama and Non-Alabama Student Policy

**For the purpose of assessing fees, applicants shall be classified as Alabama or non-Alabama students. Non-Alabama students are required to pay a non-resident tuition fee.**

An Alabama student is a person who shall be a citizen of the United States or a resident alien and who shall have resided and had habitation, home, and permanent abode in the State of Alabama for at least 12 months immediately preceding current registration. In applying this regulation, "applicant" shall mean a person applying for admission to the institution if applicant is married or 19 years of age, or, otherwise, it shall mean parents, parent or legal guardian of his or her person. If the parents are divorced residence will be determined by the residency of the parent to whom the court has granted custody.

A person who establishes a guardianship for purpose of avoiding non-Alabama fees will be subject to non-resident tuition.

In the determining of an Alabama student for purposes of assessing fees, the burden of proof is on the applicant.

## Additional Persons Eligible for Resident Tuition

A. Military personnel on active duty stationed in Alabama and their dependents (as defined by Internal Revenue Codes) as well as military personnel whose "Home of Record" is Alabama and their dependents.

B. Non-resident graduate students who hold assistantships of 1/4 or more appointments.

C. Full-time employees of a State agency or institution and their spouses and/or dependent children.

D. Persons who are dependents of a non-resident employed in Alabama full-time for as least one year prior to registration and who have filed an Alabama Income Tax Return for the tax year prior to the year in which the student is admitted and did not claim a credit on the Alabama return for income taxes paid to another state.

E. Non-resident students enrolled in programs included in the Southern Regional Education Board Academic Common Market provided the student does not change to another program not included. In such cases of change the student will be classified as a non-resident for tuition purposes.

F. Persons whose spouses by legal marriage are bona fide Alabama residents.

G. Dependents and spouses of persons who establish domicile within the State and who are employed full-time in a permanent position in the State.

H. Non-resident persons enrolled in programs of Auburn University not funded by tax revenues of the State of Alabama may be exempted from non-resident tuition.

## Initial Determination of Eligibility

In order to be initially classified as eligible for resident tuition, students must demonstrate that they or their parent, guardian or spouse qualify for one of the eligibility categories prior to the first day of class. A signed statement is required that qualification for the eligibility category claimed has been met prior to registration.

## Change in Eligibility for Resident Tuition

Students determined to be eligible for resident tuition will maintain that eligibility upon re-enrollment within one full academic year of their most previous enrollment unless there is evidence that the student subsequently has abandoned resident status, e.g., registering to vote in another state. Students failing to re-enroll within one full academic year must establish eligibility upon enrollment.

Students initially classified as ineligible for resident tuition will retain that classification for tuition purposes until they provide documentation that they have qualified for resident tuition. The burden of proof of change in eligibility rests on those requesting change. Evidence relevant to an initial determination of eligibility is also relevant to establishing a change in eligibility.

Non-resident students who carry an academic load normal (10 or more hours) for students at Auburn University will be presumed to be in the State primarily for the purpose of gaining an education. Clear and convincing proof may overcome this presumption, but again, the burden of proof rests on those requesting change in eligibility. Any change in resident tuition eligibility occurring during an academic term will not become effective until the registration for the succeeding term.

The following types of evidence may contain data to establish twelve (12) month residency in the State. At least five of the eight criteria must be met. In all cases the person must be at least 19 years of age or married; otherwise, the person's residency will be based on that of the parent or guardian.

A. Ownership of residential property and other real property in the State or continuous occupation or renting of an apartment, house or other residential space in the State on an extended term of not less than twelve months.

B. Full-time permanent employment in the State.

C. Possession of State Licenses required to do business or practice a profession in Alabama.

D. Marriage to a bona fide Alabama resident.

E. Location of voting registration.

F. Filing Alabama resident tax returns.

G. Current Alabama driver's license

H. Alabama vehicle title registration and payment of property taxes.

The Registrar at the respective Auburn University campus shall have the responsibility for determining whether a student shall be classified as an Alabama or non-Alabama student. The



decision of the Registrar shall be subject to review by the President (at Auburn) or the Chancellor (at AUM) or the designated representative of each upon written request of the applicant.

## Payment of University Obligations

The Auburn University Billing/Receivable System will bill students by mail for the majority of their charges due AU. Among the charges included within this system are those for tuition/fees, housing, parking and student health center. Other charges will be included in the system as deemed appropriate. Charges not included within this system will be billed by the department which generated the charge.

AU Billing/Receivable statements will be mailed at approximate monthly intervals corresponding to the University's quarterly schedule. Statements will be mailed about six weeks prior to the start of the quarter, again two weeks prior to the start of the quarter, and then four weeks after the quarter has started. Tuition and fees resulting from pre-registration will be included in the first statement with payment due three weeks later. Additional charges will be billed as incurred. All charges appearing on a billing statement must be cleared by the due date for that statement or late payment charges will be assessed. Late payment charges may be waived for tuition resulting from pre-registration and housing charges when financial aid is processed through the University and evidence of such aid is recorded on the statement.

AU Billing/Receivable statements will be mailed to the student's mailing address (as maintained by the Registrar's Office) when school is not in session or during quarters in which the student is not enrolled. When the student is enrolled in a current quarter, statements will be sent to the student's local address. Students may request that all billing correspondence be sent to a specified address by contacting the Bursar's Office.

Students are expected to meet all financial obligations when they fall due. The University reserves the right to deny admission, dis-enroll or withhold transcripts of any student who fails to meet promptly his financial obligations to the University. It is each student's responsibility to be informed of all payment due dates, deadlines, and other requirements by referring to official sources of University information such as this catalog, official calendar of events, announcements printed in the *Plainsman*, or that disseminated by other means from time to time. Students owing charges for prior quarters will not be assigned class schedules for future quarters until all charges are paid. Enrolled students who do not pre-register will be liable for late registration charges.

Pre-registration or other requests for class assignment create a liability for the payment of tuition and fees resulting from assigned classes. Such liability can only be excused when students withdraw or resign in accordance with University procedures.

**Checks:** Checks given in payment of any University obligation are accepted subject to final collection. If the bank on which the check is drawn does not honor the demand for payment and returns the check unpaid, the student will pay a returned check fee of \$10 and any applicable late payment charges. If payment is not cleared promptly, the student's registration may be cancelled. The University has the right but not the obligation to redeposit any insufficient check without notice to the student or maker.

Collection costs or charges along with all attorney fees necessary for the collection of any debt to the University will be charged to and paid by the debtor.

**Veterans:** All veterans (Chapters 30 and 32), reservists and guard members (Chapter 106) and veteran's dependents (Chapter 35) are responsible for paying fees and charges on the same basis as other students. Veterans under the Vocational Rehabilitation program (Chapter 31) and students receiving the Alabama GI Bill should make arrangements for their tuition, fees and books to be paid prior to their first payment due date.

**Foreign Students Under Contract:** A special administration management/program fee will be negotiated for foreign students who come to the University under a contractual arrangement that requires special administrative and programming arrangements beyond those of the regular academic program of the University.

## Fees and Charges

Auburn University's fees have remained somewhat lower than those charged by similar institutions in the Southeast and in other sections of the country. As institutional costs have risen, small increases in fees have been authorized from time to time by the Board of Trustees. Every effort is made, however, to hold fees and charges at a minimum.

## General Information

The following fees and charges are in effect at this time. However, since the catalog must be published well in advance of the next school year, it is not always possible to anticipate changes. Thus the fee schedule may have to be revised. Every effort will be made to publicize changes as far in advance as possible.

### Basic Quarterly Charges

Students should be prepared to complete registration by payment of fees and charges, upon notice, three to four weeks before the beginning of the quarter.

Graduate & Undergraduate	Ala. Students	Non-Ala. Students*
1. University Fee - 10 to 15 credit hours (all except Vet. Med.) (a.)	532.00	1,596.00**
2. University Fee - Vet. Med. - 10 to 15 credit hours (a.)	672.00	2,016.00**
3. Additional Fee for each credit hour over 15 on 1 and 2 above	17.00	51.00**
4. Part-time Registration Fee (Less than 10 credit hours) (b.)	92.00	276.00**
5. Part-time Credit Hour Fee (Less than 10 credit hours) (except Vet. Med.) (b.)	44.00	132.00**
6. Part-time Credit Hour Fee - Vet. Med. (Less than 10 credit hours) (b.)	58.00	174.00**
7. Auditing Fee (c.)	44.00	132.00**
8. Clearing for Graduation (d.)	92.00	276.00**
9. Doctor of Pharmacy Fee (e.)	119.00	119.00**
10. Music Fee (per applied course) (f.)	54.00	54.00**
11. Computer Literacy (U 135)	15.00	15.00**
12. Flower Arranging (HF 225)	50.00	50.00
13. Field Laboratory Courses - Off Campus Program (g.)		
(a.) Service Fee	92.00	276.00**
(b.) Additional Fee Per Credit Hour	44.00	132.00**
14. Correspondence Study Course Fee (h.)		
a. Service Fee	12.00	12.00**
b. Additional Fee Per Credit Hour	28.00	28.00**

\*Non-Alabama fees shall not apply to Graduate Teaching Assistants, Graduate Research Assistants and Graduate Assistants, on a one-fourth time or greater appointment in the University. These shall pay fees as Alabama students when the registrar is furnished appropriate certification by the fifth class day of each quarter.

\*\*Only \$672 for SREB students.

- (a.) The University Fee is used to meet part of the cost of instruction, physical training and development, laboratory materials and supplies for student's use, maintenance, operation, and expansion of the physical plant, Library, Student Health Services and Student Activities.  
The Student Activities portion of the fee supports such activities on campus as intercollegiate athletics, exhibits, GLOMERATA, Intramural sports, PLAINSMAN, religious life, social affairs, student government, student union activities and operations, TIGER CUB, and WEGL Radio Station. This fee includes 25 cents held in reserve to cover unnecessary damage to University property by students.
- (b.) Students registering for fewer than 10 credit hours will pay the Part-Time Registration Fee plus the Credit Hour Fee for each credit hour. (Students who register for 10 or more hours will pay the University Fee.) The Part-Time Registration Fee is remitted to full-time faculty and staff taking no more than five credit hours. All students except faculty and staff are eligible to participate in Student Health Services and Student Activities.
- (c.) Any student who pays less than full fees must pay this fee for auditing a course. (Not charged to faculty and staff.)
- (d.) A student who is a candidate for a degree in a quarter in which no credit work is taken is required to register in such quarter as a prerequisite to graduation. (For members of the faculty and staff the charge shall be reduced to \$5.00.) Graduation fee is to be paid in addition to this charge.
- (e.) Extra fee per quarter - Clinical Pharmacy.
- (f.) This additional music fee to be paid for each Performance Course of Individual Instruction, instruction is available in one hour or two half-hour lessons per week.
- (g.) Students registering for off-campus courses (Field Laboratory Courses) will pay the Service Fee plus the additional fee per credit hour.
- (h.) Students registering for Correspondence Study Courses will pay the Service Fee plus the additional fee per credit hour. Special Lab Fees may be associated with certain courses.

## Other Fees & Charges

### Late Payment Charges

All students, regardless of classification, must clear tuitions, fees and other University obligations by the deadlines set by the University, or be liable for late payment charges. Late payment charges are assessed following each payment due date based on the following schedule:

Amount Past Due	Late Payment Fee
Less than \$10	\$1
\$10 or more up to \$100	\$10
\$100 or more	\$25

### Late Registration Fee 50.00

Applicable for currently enrolled students who fail to pre-register for the term for which they are registering.

### Reinstatement Re-enrollment Fee (after disenrollment) 60.00

### Achievement Certificate Fee 10.00

### Application Fee 15.00

The application fee must accompany all applications for admission. Not refundable nor applicable to registration fees. (See section on Admissions.) An application fee must accompany the application for housing and is not refundable or applicable to housing fees. (See section on housing.)

### Change in Course fee 10.00

Charge is made in cases where student is not required or advised by the University to change, but has the Dean's permission to do so after Schedule Adjustment period. This fee is not refundable.

### Change in Curriculum Fee (if change made after classes begin) 10.00

### Chemistry Lab Fee (not refundable after 10th class day) 20.00

### Duplicate Diploma Fee 15.00

### Doctoral Dissertation Microfilming Fee (payment due in advance) 50.00

### Equivalency Examination Fee (GED) (each) 20.00

### Thesis and Dissertation Binding Fee (per copy) 7.00

Three to five copies usually required. Payment due in advance.

### Graduation Fee (each degree) 15.00

Payable at beginning of the quarter in which the student expects to receive a degree. Payment of graduation fee is due by the due date of bill in which it is charged.

### Cap and Gown Rental Fees (for Graduation Exercises) (includes retaining of tassel)

Bachelors - cap and gown 12.95

Masters - cap, gown, and hood 19.95

Doctorate - cap, gown, and hood 21.95

### Internships

Agriculture AEC 399, ADS 495, AY 390, ENT 491, FAA 315, HF 330, PH 402

Business AC 400, EC 400, FI 400, MN 400, MT 400

Consumer Affairs CA 335

Criminal Justice LE 464

Foreign Language International Trade FL 499

Journalism JM 425

Political Science PO 450

Speech Communication SC 439, CD 658, CD 668

Zoology ZY 490

Fees will be one-half the full University Fee and one-half of the non-Alabama student fee, if applicable. Total course load not to exceed 9 credit hours.

### Rent for Single Student Housing, per quarter (see housing) 320.00 to 485.00

### Rent for Caroline Draughon Apts., per month (see housing) 235.00 to 325.00

### Meal Plans (See section on Food Services under Student Services and Programs.)

### Air Force ROTC Uniform and Equipment Deposit 50.00

All students, both Basic and Advanced, are required to deposit the sum of \$50 with the University Bursar, prior to enrollment in AFROTC. The deposit is refunded to the student on completion of the program or withdrawal therefrom and the return of the uniform and other supplies.

Registration fees billed home, To parents, Trust Funds, companies, or other sponsors	5.00
Charge for returned check	10.00
Notice: ALL CHECKS ARE ACCEPTED SUBJECT TO COLLECTION	
<b>Special Service Fees</b>	
Cooperative Education Program	15.00
Internship Fee-Veterinary Medicine	15.00
Transcript Fee	3.00

**Registration Fee Cancellations or Refunds**

Students officially resigning prior to the start of a quarter will not be held liable for fees (other than non-refundable fees). Students resigning during the first 10 days of class are excused their regular fees but are liable for the \$100 resignation fee.

The liability for fees will not be excused for resignations effective after the 10th class day except in cases of resignation caused by personal illness (physician's statement required) or call into military service (copy of activation orders required). A pro-rata reduction will be made in cases of personal illness and a full reduction for military service activation. Students having made prior payment will be refunded the amount paid less their liability after the resignation. Students suspended for disciplinary reasons are not eligible for refunds or reductions in liability. Resigning students receiving refunds will first have their refunds applied to any outstanding obligations and to any scholarship, grant or loan which they had received for the quarter.

Students reducing course loads on or prior to the 10th day of classes may be eligible for a partial refund or reduction in liability of tuition and fees. To be eligible, the completed schedule adjustment form must be left for final approval with the applicable academic dean's office on or before the 10th day of classes. In such cases, fees will be reassessed based on the adjusted schedule.

## Academic Regulations

### Registration and Scheduling

Every student who makes use of the instructional staff and facilities of the University must register and pay fees. This rule also applies to students who are clearing incomplete grades, clearing for graduation, or working on graduate theses. The University Calendar on pages 6 and 7 lists the dates for registration, schedule adjustment, and final registration. The student's dean authorizes and approves the subjects for which the student registers, as well as any changes or adjustments in his schedule. Courses should be scheduled in sequence as they appear in the curriculum model.

Students are urged to register during the computer-assisted registration held in the quarter preceding the term for which they are registering. A currently enrolled undergraduate who fails to do so is charged a late fee. Schedule distribution and fee payment are accomplished by mail prior to the beginning of a quarter for students who computer register. A final registration is held one to two days before the first day of classes.

When registering, the student is responsible for observing the prerequisites or corequisites of courses. Any waiver of these requirements must be approved by the instructor and/or his department head. Also, waiver of the junior standing prerequisite for courses that may be taken for graduate credit must have the Graduate School dean's approval.

Late registration must be authorized by the student's dean, and a late fee will be charged. A student's class load may be reduced by the dean. No student will be registered after the tenth day of classes without the approval of the Vice President for Academic Affairs.

Course credit completed at another college or university while the student is concurrently enrolled at Auburn University will not be counted toward his degree without prior permission from the dean.

### Registration and Readmission Permits

Entering freshmen and first-quarter transfer students obtain permits to register from the Admissions Office. Previously enrolled undergraduates secure their permits from the Office of the Registrar; graduate students receive theirs from the Graduate School.

A student seeking readmission who has attended another college since being enrolled at Auburn University must (1) be eligible to re-enter the last institution attended and (2) have a C



average overall on coursework attempted at other colleges attended two or more terms. Two official transcripts from each institution attended must be furnished to the Registrar's Office.

## Change of Major or Curriculum

Students must have their dean's approval to change to another major within the same College or School. To change Colleges or Schools within the University, a permit from the Registrar's Office is required.

## Course Load

The maximum load for students in undergraduate curricula is 19 quarter hours. A normal load is 15-19 hours per quarter. An undergraduate must enroll for 12 or more hours to be considered full-time for athletic, financial aid, loan and insurance purposes. With their dean's approval, students may schedule less than a normal load.

The maximum load may be exceeded under the following circumstances:

1. The academic dean may approve up to 20 hours as a convenient load.
2. On approval of their dean, students may schedule overloads not to exceed 23 hours if, during their last residence quarter at Auburn University in which they carried 15 or more hours, they passed all work attempted and earned a grade point average of 2.5 or higher. Students who have scheduled fewer than 15 hours during an intervening quarter (or quarters) will retain the overload privilege if all work carried was passed with a minimum grade-point average of 2.5 in each intervening quarter. In special cases the dean may make exceptions to the 2.5 requirement, by written notice to the Registrar.
3. On approval of their dean, graduating seniors who are ineligible to carry an overload may schedule a maximum of 23 hours if the overload will allow them to graduate in that quarter.

Students who register for work in excess of the approved load may be required by the dean to drop the overload during the Schedule Adjustment period.

## Curriculum Model Change

When the University changes a curriculum model, students in the altered curriculum may be required to complete the subjects and hours placed above the level to which they had progressed. They will not, however, be required to complete additional subjects placed in the curriculum below the level they had achieved. Courses shifted from one class level to another are exempt from this latter provision. Students' deans will determine the revised subject requirements, and the Registrar will determine the revised total hour and grade-point requirements. In no case, however, will the changed curriculum compel students to accumulate additional hours and grade points in order to graduate.

## Classification

The undergraduate's classification will be determined by the number of credit hours earned at Auburn and elsewhere.

Freshman .....	47 or fewer quarter hours
Sophomore .....	48-95 quarter hours
Junior .....	96-143 quarter hours
Senior .....	144 or more quarter hours

The numbering sequence for identifying the classification of students is as follows; 1, Freshman; 2, Sophomore; 3, Junior; 4, Senior; 5, fifth year for Pharmacy, Architecture, and Veterinary Medicine; 10, Unclassified (non-degree students); 12, Special and Transient students and auditors only; 6, 7, 8, 9, 11, 13, and 14 are Graduate student classifications.

A student with a baccalaureate degree who undertakes a program for a second bachelor's degree will be classified as an undergraduate.

## Auditing

Auditing of courses is restricted, and rarely permitted in laboratory courses. A student's audit privilege is granted only on the approval of the dean and the head of the department of the course involved.

Auditors not previously admitted to the University must be approved for registration by the Admissions Office. They must register and pay appropriate fees. Although listed on class rolls, auditors are not required to take part in classroom discussion, tests, examinations, or reports. They will receive no grade or credit; however, a student who does not attend or attend regularly the audited course will have "non-attendance" indicated by the course on his records.

Students may not change from audit to credit after classes begin, but may change from credit to audit within the first three weeks of classes. No refund of fees will be made except for changes made during the first two weeks of classes in accordance with University policy.

## Class Attendance and Procedures

1. Students are expected to attend all their scheduled University classes. College work proceeds at such a pace that regular class attendance is necessary to receive proper instruction. Specific policies regarding class attendance are the prerogative of individual faculty members. Faculty shall inform each class in writing at the beginning of the course regarding the effect of absences on the determination of grades.

2. The student shall be expected to carry out all assigned work and to take examinations at the class period designated by the instructor. Failure to carry out these assignments or to take examinations at the designated times may result in an appropriate reduction in grade, except as provided in paragraph 4 below.

3. Instructors shall determine the policy regarding grading which they feel is best for the course. This policy shall be presented to the class, in writing, at the beginning of the quarter and will govern the actions of the instructor in the course.

4. Arrangements to make up missed work due to excused absences shall be initiated by the student. Instructors will be expected to excuse absences for:

a. Illness of the student or serious illness of a member of the student's immediate family. The instructor shall have the right to request appropriate verification.

b. The death of a member of the student's immediate family. The instructor shall have the right to request appropriate verification.

c. Trips for members of the student organizations sponsored by an academic unit, trips for University classes, and trips for participation in intercollegiate athletic events. When feasible, the student must notify the instructor prior to the occurrence of such absences, but in no case shall such notification occur more than one week after the absence. Instructors may request formal notification from appropriate university personnel to document the student's participation in such trips.

d. Religious holidays. Students are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays.

e. Subpoena for court appearance.

f. Any other reason the instructor deems appropriate.

5. The regularly accepted time for class to begin shall be 10 minutes after the hour. If the instructor does not appear within 20 minutes after the hour, it may be assumed the class is cancelled. All classes shall be dismissed promptly on the hour.

6. It is University Policy that all classes will meet as scheduled on the last day before and the first day after holiday periods designated by the University.

7. Unresolved problems regarding class attendance and/or procedures should be referred to the University Student Grievance Committee.

## Examinations

Examinations are classified as (1) final examinations at the end of each quarter; (2) special examinations; and (3) other course examinations as determined by the instructor. The final examination policy is stated below.

Announced tests in undergraduate courses will be administered at a regularly scheduled meeting of the course. Exceptions to this regulation may arise in specialized courses requiring performance or oral tests, and in multiple-sectioned laboratory classes requiring practical laboratory tests. Faculty having sound reasons for scheduling tests at times other than regularly scheduled meeting times are to obtain approval from the department head prior to the beginning of the quarter, and are to present a written schedule of these changes to the class during the first few days of the quarter. Rescheduled tests are not to interfere with other scheduled academic endeavors of the students involved, and an appropriate reduction in regularly scheduled class time is to be given to compensate for the rescheduled test period.

**Final Examinations.** A final examination is a desirable means of evaluation in most undergraduate courses. In unusual circumstances, performance tests, term papers, research projects or other forms of evaluation appropriate to the objectives of the course may be substituted for a final examination with the approval of the department head, who will report his action to the dean and Vice President for Academic Affairs. Faculty not giving a final examination are to present to the class at the beginning of the quarter a written description of how final grades will be determined.

Final examinations should be administered during the hours specified in the quarterly examination schedule. Due to the specialized nature of many small upper-level undergraduate courses and graduate courses, deviations from this requirement are sometimes warranted. Such deviations are to be approved by the Vice President for Academic Affairs, and rescheduled

examinations must not interfere with scheduled academic activities of the students involved. The professor teaching a 600-level course shall determine whether a formal final examination is appropriate.

## Grades

Final passing grades are **A**, superior; **B**, good; **C**, acceptable; **D**, passing; and **S**, satisfactory. Final failing grades are **F**, failure; **FA**, failure for excessive absences; **XF**, absent from final examination and failing at the time; **U**, unsatisfactory; and **WF**, officially dropped with permission of the student's dean but failing at time of withdrawal.

**ANG**, no grade, thesis and dissertation research credit, is assigned to courses 699 Research for Thesis and 799 Research for Dissertation.

An **X** is assigned if the student is passing but missed the final examination, or if he has incomplete work and is absent from the final examination. An **IN** is assigned if the student has cleared the final examination but has not completed other required work. Grades of **X** and **IN** must be cleared during the student's next residence quarter or they will be recorded as permanent failing grades. A graduate student must clear an **IN** grade within two quarters; otherwise, the grade will be recorded as a permanent failing grade.

The first four days of each quarter are designated as the Special Examination period to remove **X** grades. The student will get a permit from the dean in order to make up a missed examination. A grade of **IN** will be changed by the Registrar upon written notice from the instructor. A final grade may be changed only by the written request of the instructor, with the approval of the department head and dean which must be submitted to the Registrar.

A grade of **F** and additional penalties may be assigned for academic dishonesty. See the Student Academic Honesty Code section in the Tiger Cub for further information.

**Grade Assignment For Class Withdrawals.** No grade penalty shall be assigned for dropping a course on or before mid-quarter. A student who withdraws from a course prior to the 10th class day will have no grade assignment; however, after the first 10 days a **W** (Withdrawn Passing) grade will be recorded for the course.

A course may be dropped with a **W** after mid-quarter only under unusual conditions. When approval for dropping the course under such circumstances is granted by the student's dean, a **W** may be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise, a grade of **WF** (Withdrawn Failing) is assigned.

**Grade Average and Quality Points.** A 4.0 grade scale is used. An **A** equals 4.0; **B**, 3.0; **C**, 2.0; **D**, 1.0; and **F** equals 0.0. Only coursework attempted at Auburn University is used in determining the grade report average and continuation-in-residence requirements. **S** and **U** grades do not enter into grade-point computations.

**S-U Grading.** Grades of **S** (Satisfactory) and **U** (Unsatisfactory) may be assigned only to courses approved to be graded S-U, and courses elected under the S-U option.

A junior or senior with a minimum overall grade average of 2.5 on at least 30 hours of credit earned at Auburn may elect any course to be graded on the S-U option, except for courses required in the freshman and sophomore years or for courses constituting the major as defined by the student's curriculum. A total of 20 credits may be earned at the rate of one course per quarter. The student will receive credit toward a degree for these courses, provided credit is normally accepted in his curriculum for this coursework.

An unclassified student may schedule one or more courses on the S-U option with the approval of the dean. Coursework completed on the S-U choice by unclassified students may not be applied later to degree requirements should the student become a degree candidate.

A graduate student may enroll in undergraduate courses, except for 500-level courses taken for graduate credit, under the S-U option on the major professor's recommendation.

Students are not permitted to change from S-U grading to conventional grading or vice versa after the schedule adjustment period.

**Repeat Of Courses.** No student may repeat a course for credit in which the student has previously earned a grade of **A**, **B**, or **C** without written permission by the student's academic dean. Courses specifically designated as repeatable in the *Auburn University Bulletin* are exempt from this regulation.

**Grade Reports.** In compliance with the Family Educational Rights & Privacy Act, one copy of each student's grade report is mailed at the end of each quarter to the student at the address furnished by the student.

## Dean's List

The name of every eligible student who meets certain scholastic requirements for a given quarter is placed on a list prepared for the dean of the student's College or School. This honor is also noted in the student's permanent record.

To meet Auburn University's requirements for inclusion on the dean's list, the student must be enrolled for 15 or more credit hours exclusive of any S-U option courses, pass all courses attempted for the quarter, and earn a grade-point average of at least 3.4 (on the 4.0 system). Furthermore, the dean of each College or School has established specific criteria governing inclusion on the list. The special requirements, applied in addition to the University regulations, are listed as follows:

- College of Agriculture: 3.70 average.
- School of Architecture: a grade-point average within the upper 10 percent of the full-time students enrolled in a given department.
- College of Business: 3.80 average.
- College of Education: 3.80 average.
- College of Engineering: 3.70 average; only if an S-U graded course is required in the student's curriculum may it be included in the 15-hour minimum total.
- School of Forestry: 3.70 average.
- School of Human Sciences: 3.80 average.
- College of Liberal Arts: 3.60 average.
- School of Nursing: 3.75 average.
- School of Pharmacy: 3.75; only if an S-U graded course is required in the student's curriculum may it be included in the 15-hour minimum total.
- College of Sciences and Mathematics: 3.75 average.
- College of Veterinary Medicine: grades in the upper five percent of the enrollment of each class.
- Interdepartmental-Environmental Health: 3.65 average.

## Resignation

Students who wish to resign from all coursework for a quarter should contact their deans. They withdraw without penalty of failure if they resign no later than mid-quarter, a date specified in the University calendar.

After this date, the dean will obtain from the student's instructors his or her scholastic standing at the time of resignation, and report it to the Registrar. If the student is failing in over half of the work, the number of hours reported as failing will be counted as credit hours attempted and will be included in academic eligibility calculations. Those hours reported as passing will be dropped and will not be counted in the grade-point computation. Furthermore, when a student's total hours attempted, multiplied by two, exceed grade points earned by more than 45 at the end of the last quarter in residence prior to resignation, the grades will be reviewed by the dean to determine whether the student has a C average for the quarter in which he or she is withdrawing. Students not having C averages will be placed on academic suspension.

When a student through illness or physical disability is forced to resign after mid-quarter, and when this condition has been the main factor in causing scholastic deficiencies, discretionary power in waiving the scholastic penalty will rest with the student's dean. A student who is resigned for disciplinary reasons will retain the academic status achieved immediately prior to the disciplinary action.

## Academic Probation and Suspension of Undergraduates

Auburn University may place an undergraduate student on probation or suspension at any time if the student flagrantly neglects academic work or makes unsatisfactory progress toward graduation.

Academic eligibility requirements for continuation in residence are calculated on Auburn University coursework. Academic probation is a scholastic warning, indicating that the student is in danger of being suspended. A student on probation can continue enrollment without interruption. Academic suspension is a status that bars a student from continued enrollment at the University for a period of time.

A student will be placed on academic probation whenever the total number of hours attempted at Auburn, multiplied by two, exceed grade points earned by more than 25 except that no entering freshman will be placed on probation on the basis of the first quarter's work at the University.

A student may remove probation status by reducing the grade point deficiency to 25 or fewer grade points.

An individual on academic probation will be placed on suspension when the number of hours attempted at the University, multiplied by two, exceed grade points earned by more than 45. However a student will not be suspended at the end of a quarter in which a 2.0 (C) average was earned, but will be continued on probation.

A student's first academic suspension will be for a period of two quarters, summer quarter being counted as any other quarter. He or she will be readmitted on academic probation following the expiration of the first suspension. A student who incurs a second academic suspension is placed on indefinite suspension for at least four quarters before an application for readmission will be considered.

An academically suspended student who has incomplete or other deferred grades which could, when cleared, remove the suspension will be permitted to register conditionally for the next quarter. The suspension must be removed within two weeks of the beginning of the quarter; otherwise the student will be resigned by the Registrar's Office.

No credit earned at another institution by a student on academic suspension from Auburn will be used in clearing a suspension or in meeting requirements for an Auburn University degree.

A student who resigns after mid-quarter may be subject to academic suspension. (See Resignation for further information.)

**College of Engineering.** Students enrolled in a professional curriculum in the College of Engineering may be placed on Engineering academic suspension if their overall grade averages drop below a 2.0. Specific details are listed in the College of Engineering section of this *Bulletin*.

**School of Pharmacy.** A student enrolled in the School of Pharmacy who is placed on academic suspension and who wishes to re-enter the School must, in addition to complying with other University readmission requirements, be approved for readmission by the Pharmacy Admissions Committee and, when applicable, by the University Admissions Committee.

**College of Veterinary Medicine.** Any student who earns less than a 2.25 grade-point average for any quarter will be placed on academic probation. A student who fails to earn a 2.25 grade-point average for any two quarters in the same academic or calendar year may be dropped from the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have an overall average of 2.25 for an academic year or who does not have a veterinary overall average of 2.25 for an academic year or who does not have a veterinary school cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

A student who makes a grade of F on any course may be dropped from the College of Veterinary Medicine until such time as the course is offered again. Such student may be required to repeat certain other courses in the curriculum for the quarter in which a grade of F was earned.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the general scholastic requirements for continuance in the University. Scholastic penalties incurred during enrollment in the College of Veterinary Medicine will become part of the student's record.

## Satisfactory Progress

**Student Athletes:** In addition to meeting the general academic requirements of the University, student athletes must meet all academic requirements, including those relating to satisfactory progress toward a degree, set forth in the legislation of the Southeastern Conference (SEC) and of the National Collegiate Athletic Association (NCAA).

**Student Financial Aid Recipients:** In addition to meeting the general academic requirements of the University, applicants for student financial aid funds must maintain Satisfactory Academic Progress in order to receive, or to continue to receive, assistance through federal, state, and institutional student aid programs. Detailed descriptions of these Satisfactory Academic Progress requirements for distinct classifications of Auburn students are available from the Office of Student Financial Aid.

**Veterans:** All VA eligibles (Chapters 30, 31, 32, 35 and 106), in addition to meeting the general academic requirements set forth by the University, must maintain satisfactory academic progress as approved by the State Approving Agency of the State of Alabama, Department of Education. Such standards are as follows: Any undergraduate VA eligible must have a 2.0 grade-point average after the student has earned 178 hours at Auburn University. This would be checked at each quarter's end and any VA eligible not meeting this requirement would be terminated from receiving VA benefits. Separate standards of progress apply to graduate students as outlined in the *Auburn University Graduate Bulletin*.



## Advanced Standing and Credit

Prospective students are advised to write the Registrar's Office at Auburn University requesting a brochure on the Advanced Placement Program.

Entering students with superior preparation or with special competence in a specific area may qualify for advanced placement or credit. Placement or credit may be granted on the basis of Advanced Placement Examinations of the College Board, scores on college ability or achievement tests, departmental proficiency examinations, College Level Examination Program (CLEP) General and Subject examinations, and other evidences of experience and competence.

Students enrolled at Auburn may apply to an academic department for a Departmental Proficiency Test if they have demonstrated a reasonable basis of experience or study in the subject area. If they score a satisfactory grade on the examination, they will be eligible for placement in an advanced course and for credit in the subject. Students who have previously enrolled for the subject at Auburn are not eligible for this test in the same subject.

The amount of advanced placement credit granted in each subject area is determined by the recommendation of the academic teaching department with the approval of the student's academic dean and the Registrar.

Students transferring to Auburn, who have received advanced placement credits from another institution may be awarded these credits insofar as Auburn's requirements for awarding such credits are met. Advanced placement credits may not be substituted for residency requirement.

## Correspondence and Extension Credit

A student may earn a maximum of 25 percent of the total credits required for the baccalaureate degree by correspondence or extension; however only 18 hours of the final year's work may be earned thus. An individual having less than three quarters in residence prior to the last academic year may earn only 15 hours by correspondence or extension.

A student in residence may not enroll in a correspondence course if the course or a suitable substitute can be scheduled. The resident student may not exceed the maximum class hour load by adding a correspondence course. A student must have prior approval of his/her Auburn dean if the credits are to be applied toward an Auburn degree.

The grade earned for correspondence credit will be entered on the student's record.

Information on available courses may be obtained from the Independent Study Office, 100 Mell Hall, Auburn University, Alabama 36849, (205) 826-5100.

## Military Science and Physical Education Credit

A student may be allowed a maximum of 18 credits in military science courses toward graduation, insofar as the credits are applicable to the student's curriculum. Of these 18 credits a maximum of six credits of basic ROTC at the rate of one credit per course is allowed toward graduation. A student may be allowed six credits on physical education activity courses toward graduation.

A student may be allowed six credits on physical education activity courses toward graduation.

A student who has served in the Armed Forces may receive physical education credits as follows: for less than six months service, no credit; for six months to less than a year, two hours credit for Physical Education; for one year or more in the service, three hours of credit. Credits may also be allowed for military service courses. Application for credit for military experience should be submitted to the Registrar. The student's academic dean must approve credit into the student's curriculum.

## Degree Requirements

To earn the bachelor's degree students must complete the subjects in their curriculum and must earn at least a **C** average on credits accepted for their degree program. Individuals with credit from other institutions must also have a **C** average on their Auburn course credits used in their curriculum toward graduation. Students in Business and Engineering curricula must have a **C** average on all work attempted at Auburn. Students in Engineering must also have a **C** average in their major courses. Credits required for graduation range from 192 to 257 hours.

To earn the bachelor's degree from the School of Human Sciences, students must earn a minimum overall grade average of **C** on all subjects in their majors and on all coursework attempted at Auburn University. This change became effective Summer Quarter, 1986, for all entering freshmen and transfers.

The student's dean clears subject requirements in the curriculum; the Registrar clears total hour, grade point, and freshman English.

Forty-five hours must be earned in residence in order to receive a bachelor's degree. As a general rule the 45 hours must be taken in the final year and in the school or curriculum of graduation. The student's dean may waive the final year's residence, and may also allow course credit to be earned at another institution during the final year. However the 45 hours in residence at Auburn is a firm requirement.

To complete a second baccalaureate degree, an Auburn graduate must complete an additional 45 hours, at least 90 grade points, 36 weeks in residence, and satisfy course requirements in the curriculum. Graduates of another four-year institution who seek a bachelor's degree at Auburn must complete the hours required in the final year of their curriculum and satisfy the requirements listed immediately above.

Seniors must clear deferred grades by the tenth day of the graduation quarter for courses to be used toward degree requirements. Correspondence courses must be completed by mid-quarter prior to graduation.

A graduation fee is payable to the Cashier's Office, at the beginning of the quarter of graduation. If a student is in default on any payment due the University, the diploma and academic record will not be issued until the matter is cleared.

Degrees are conferred at Commencement exercises each quarter. If a student does not plan to attend the exercises, arrangements should be made with the dean or the Registrar to receive the degree in absentia.

Beginning Fall Quarter 1994, to earn a bachelor's degree a student must earn a minimum overall grade average of C on all coursework in the major, and a minimum overall grade average of C on all Auburn coursework applied to the degree, and a minimum grade average of C on all transfer credits applied to the degree.

## Graduation Honors

Students with a minimum overall grade average of 3.4 are graduated *Cum Laude*; a 3.6 *Magna Cum Laude*; and a 3.8 *Summa Cum Laude*. This distinction of high academic achievement is placed on the student's diploma and on his/her permanent record.

The grade average for graduation honors must be achieved on Auburn University coursework. At least 90 hours in residence at Auburn University are required for graduation honors. Grades of S or U and noncredit courses are not used in the calculations. Students earning a second baccalaureate degree must earn the minimum overall grade average required for honor distinction on the additional hours completed for the second degree. Those additional hours must total at least 90 credit hours.

## Student Academic Grievance Policy

The Student Academic Grievance policy, which appears in full in the student handbook, *Tiger Cub*, is designed to resolve academic grievances of students which result from actions of faculty or administrators.

## Confidentiality of Student Records

The University recognizes that the maintenance of student information and educational records is necessary and vital to assist the student's education and development and to provide opportunities for University research and policy formulation. The University recognizes its obligation to exercise discretion in recording and disseminating information about students to insure that their rights of privacy are maintained.

The University will furnish annual notification to students of their right to inspect and review their educational records; the right to request amendment of educational records considered by them to be inaccurate or misleading or that violate privacy or other rights; and of their right to a hearing should the University decline to amend such records. This annual notice will be published in the University's *Bulletin*.

The following guidelines have been developed to insure the privacy rights of students. For the purposes of this policy statement a student is defined as an individual who has been admitted and has been in attendance in a component unit of the University. Classification as a student in one component unit of the University (e.g., an undergraduate program) does not infer that the person has been accorded the rights outlined below in other component units (i.e., graduate school, professional schools, branch campus).

## Student Access to Records

Students have the right to be provided a list of the type of educational records maintained by the University which are directly related to the student; the right to inspect and review the contents of these records; the right to obtain copies of these records; the right to a response from the University to reasonable requests for explanation and interpretation of these records; the right to an opportunity for a hearing to challenge the content of these records; and if any material or document in the educational record of a student includes information on more than one student, the right to inspect and review only the part of such material or document as relates to the student.

Students do not have access to: financial records of their parents; confidential letters and statements of recommendation which were replaced in the educational record prior to January 1, 1975, provided such letters or statements were solicited or designated as confidential and are not used for purposes other than those for which they were specifically intended; confidential recommendations, if the student signed a waiver of the right of access, respecting admission, application for employment, and the receipt of an honor or honorary recognition.

Students do not have access to: instructional, supervisory, and administrative personnel records which are not accessible or revealed to any other individual except a substitute; Campus Security records which are maintained apart from educational records, which are used solely for law enforcement purposes, and which are not disclosed to individuals other than law enforcement officials of the same jurisdiction; employment records except when such employment requires that the person be a student; and the Alumni Office records.

Students do not have access to physical or mental health records created by a physician, psychiatrist, psychologist or other recognized professional acting in his or her capacity or to records created in connection with the treatment of the student under these conditions which are not disclosed to anyone other than individuals providing treatment. These records may be reviewed by a physician or appropriate professional of the student's choice.

## Procedures for Access

The Registrar's Office has a complete list of educational records maintained by the University which students may obtain. Students should contact the appropriate office to inspect and review their records. An office may require that a University official be present when a student inspects and reviews his educational records. Any questions concerning a student's access to records should be directed to the Registrar.

## Release of Directory Information

Directory information may be released by the University without the student's written consent. Directory information consists of all items listed on the student's registration card, participation in recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended, and other similar information.

A student may deny the release of directory information by requesting that the information not be released. This should be done at registration time. The student who is in attendance must notify the Registrar's Office in writing each quarter of enrollment to deny the release of this information. To deny the release of participation in recognized activities the student must notify the Vice President for Student Affairs and the Academic Dean in writing. To deny the release of athletic information the student must notify the Director of Athletics in writing. To deny the release of directory information a student must give the above notification each quarter of registration. A former student, one who is not in attendance, must contact the appropriate offices above to deny the release of directory information.

## Release of Educational Records

The University will release a student's educational record(s) upon the student's written request. The student must:

1. Specify the records to be disclosed.
2. Include the purpose or purposes of the disclosure.
3. State the party or parties and the address to whom the information is to be disclosed.

The student shall, upon request, receive a copy of the record that is to be disclosed. It is University policy to furnish single copies of a student's record at no charge except for the standard transcript fee, if applicable.



The University may release students' educational records to the following without prior written consent:

1. University officials who have a legitimate educational interest in the records. University officials are defined as teachers, administrative personnel and other employees except personnel of the security or law enforcement unit of Auburn University who in the performance of their normal duties require access to student records. If University officials are required in the performance of their duties to review the educational records of a student, this will be considered to be a legitimate educational interest.

2. Officials of another school in which the student intends to enroll upon request of the transfer school.

3. Government representatives of the Comptroller General of the United States, the Secretary of Education, the U.S. Commissioner of Education, the Director of the National Institute of Education, the Assistant Secretary for Education, State educational authorities, and State officials to whom such information is specifically required to be reported or disclosed by State law adopted prior to November 19, 1974.

4. Appropriate authorities in connection with financial aid with the understanding that only the necessary records will be released.

5. To organizations conducting studies for, or on behalf of, the University or its agencies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction and student life provided that the studies will not permit the personal identification of students and their parents by individuals other than representatives of the organization and provided that the personally identifiable information furnished will be destroyed when no longer needed for the purposes for which the study was conducted.

6. To accrediting organizations to carry out their accrediting functions.

7. To parents of a dependent student as defined in section 152 of the Internal Revenue Code of 1954. University officials may release educational records to parents on the basis of a written certification from the parent that the student is a dependent as defined under the Code.

8. To comply with a judicial order or lawfully issued subpoena with the understanding that the student will be notified in advance insofar as possible.

9. To appropriate parties to protect the health and safety of the student or other individuals in emergencies with the understanding that only information essential to the emergency situation will be released, that information will only be released to a party who would be in a position to deal with the emergency, and that the student will be notified insofar as possible of the information released, the purpose for the release, and to whom the information was released.

No personal information on a student will be released without a statement from the University to the party receiving the information that no third party is to have access to such information without the written consent of the student.

Each office with educational records will maintain a record of each request and disclosure of personally identifiable information from the educational records of a student except for information requested in writing by the student, information released to the student or the student's parents, directory information, and information released to University officials and teachers who have a legitimate educational interest in the records. The student may inspect the record of requests, disclosures and the legitimate interests of parties requesting or obtaining information in the appropriate University office.

## Amending Educational Records

Students may request that any information contained in their educational records which they consider to be inaccurate, misleading, or in violation of their privacy or other rights be amended or deleted from the records. (A grade or other academic scores may not be amended, except that the accuracy of recording the information may be challenged.)

Students who request that information in their records be amended should first direct their request to the official with primary responsibility for the information on the record. If the matter is not resolved to their satisfaction, students should direct their requests to the official's dean or division head. If the matter is not resolved to their satisfaction, they may request a formal hearing.

## Right to a Formal Hearing and Procedures for Decision

Students may request formal hearings to challenge information contained in their educational records. The hearing will be held in a reasonable time (not to exceed 45 days) and in a reasonable place. Students may be assisted or represented by persons of their choice, including an attorney, at the expense of the student, and shall be afforded a full and fair opportunity to present evidence relevant to the issue(s).

Students or their representative should request the hearing in writing and should specifically identify the information they seek to have amended. The request should be directed to the Vice President for Student Affairs.

The Vice President for Student Affairs will conduct the hearing and render a decision within a reasonable period of time after the conclusion of the hearing and the decision shall be based

solely upon the evidence presented at the hearing. The student shall be notified in writing of the reason(s) for the decision and a summary of the evidence.

If the decision is that the information in the student's educational records is inaccurate, misleading or in violation of his rights and privacy, the statement(s) will be corrected or expunged from the student's records.

If the decision is that the information is not inaccurate, misleading, or in violation of the privacy or other rights of the student and that the information or parts thereof is to remain in the student's educational records, the student shall be notified and given the right to enter a statement in the records setting forth any reason for disagreeing with the decision of the Vice President for Student Affairs. This statement shall be maintained in the records as long as the record or contested portion thereof is maintained, and if the contested educational record or contested portion thereof is disclosed by Auburn University to any party, the student's explanation shall also be disclosed to that party.

The Secretary of Education has established a review board to receive complaints regarding violation of students' rights. Students wishing to file a complaint directly to the review board should write to the Family Policy and Regulations Office, Department of Education, Washington, D.C. 20202. Detailed procedures for this complaint procedure are listed under section 99.63 of the regulations issued by the Secretary and will be furnished upon request by the Registrar, Auburn University.

This policy is adopted pursuant to the Family Educational Rights and Privacy Act, (34 CFR Part 99), and is not intended to impose any restrictions or grant any rights not specifically required by this Act.

## Housing and Residence Life

Auburn University offers a variety of on-campus housing accommodations for students. There are 21 residence halls and 398 apartments to house single undergraduate students. There are 124 apartments available for married and graduate students. All facilities are convenient to classrooms, laboratories, libraries, cafeterias, laundries, mail rooms and recreational areas.

### Residence Halls and Single Student Apartments

Apartments for single students are located in a section of Caroline Draughon Village and the CDV Extension. The residence halls, with the exception of Noble Hall located on West Magnolia Ave., are clustered in two areas on the campus.

The Quadrangle Community consists of:

Elizabeth Harper Hall	Helen Keller Hall
Mary Lane Hall	Kate Teague Hall
Kate Conway Brown Hall	Marie Bankhead Owen Hall
Ella Lupton Hall	Letitia Dowdell Hall
Willie Little Hall	Allie Glenn Hall

The Hill Community consists of:

Mollie Hollifield Hall	Stella Knapp Hall
Dixie Graves Hall	Zoe Dobbs Hall
Annie Smith Duncan Hall	Mary Boyd Hall
Camille Early Dowell Hall	Berta Dunn Hall
Marguerite Toomer Hall	Sara Saanett Hall

Single student housing includes the following types of living options:

**LIVING OPTION I:** Two bedroom (four students) apartments furnished; air-conditioned; TV cable; rent, \$509 per student per quarter. (CDV Extension, Buildings A-F).

**LIVING OPTION II:** Suites consisting of two double rooms with connecting bath; air-conditioned; rent, \$484 per student per quarter. (Quad halls Harper, Brown, Little, Teague, Lane and Lupton).

**LIVING OPTION III:** Suites consisting of two double rooms with connecting bath; non-air-conditioned; rent, \$430 per student per quarter. (Quad halls Dowdell, Glenn, Keller and Owen).

**LIVING OPTION IV:** Double rooms with community baths on each floor; air-conditioned; rent, \$336 per student per quarter (Noble Hall).

**LIVING OPTION V:** Renovated suites consisting of two double rooms with connecting bath; air-conditioned; rent, \$494 per student per quarter (Hill halls).

**LIVING OPTION A:** Two-bedroom apartments; central air-conditioning; rent per month, \$341 furnished (or \$170.50 with roommate). (Caroline Draughon Village)

**LIVING OPTION D:** One-bedroom apartments; window air-conditioner unit; rent per month, \$267 furnished (or \$133.50 with roommate). (Caroline Draughon Village)

Students contract directly with the telephone company for telephone service in their living quarters.

The rents listed above are subject to change. Any rate increase will be announced prior to the cancellation date for the quarter the Agreement takes effect.

Specially equipped facilities for handicapped residents are provided in 12 campus residence halls and in 14 apartments at the CDV Extension. These facilities include wheelchair ramps, specially designed bathrooms, and modified furnishings.

Residents' rooms are furnished with single beds, study desks, mirrors, chest of drawers, chairs, and closets. Residents may bring other furnishings including study lamps, bedspreads and linens, curtains or drapes, rugs or carpet, book shelves, radios, stereos, television sets, plants, posters, and small refrigerators. Residents are encouraged to bring room fans for non-air-conditioned halls, but room air-conditioners are not allowed. Most residence halls have kitchens for use by the occupants and lounges for entertaining or watching television.

The apartment communities for single students (Caroline Draughon Village and the CDV Extension) are within walking distance of all classroom buildings and recreation and sports facilities. The Extension apartments feature all-electric kitchens with eating area, two bedrooms for four students, and a bathroom. Students bring their own linens, dishes, utensils, and other items to personalize and clean their apartments. Basic TV cable service is included in the rent. Ample parking areas are located adjacent to each building. Laundry facilities, TV room, study lounge, large activities room and a convenience store/deli are located within the complex.

The Caroline Draughon Village Community consists of one and two-bedroom apartments typically housing two students each (See description under, Married and Graduate Students).

## Married and Graduate Students

Apartments for married and graduate students are located in a section of the Caroline Draughon Village. These apartments are grouped in two-story brick buildings of 8, 16, and 20 units. Each apartment has a separate outside entrance. The apartments feature all-electric kitchens, furnished living and dining rooms and bedrooms, closets, cabinets and baths with shower-tub combinations. A limited number of unfurnished apartments is available. Monthly rent includes heat, water, solid waste disposal, sewage, garbage pickup and TV cable. Electricity and telephone charges are the responsibility of the resident.

There are 124 apartments in Caroline Draughon Village Community for married and graduate students, including the following living options:

**LIVING OPTION A:** Two-bedroom apartments; central air-conditioned; rent per month, \$341 furnished, \$330 unfurnished.

**LIVING OPTION B:** Two-bedroom apartments; 18,000 BTU air-conditioner in master bedroom; rent per month, \$288 furnished, \$278 unfurnished. Renovated, \$315 per month.

**LIVING OPTION D:** One-bedroom apartments; 18,000 BTU air-conditioner in master bedroom; rent per month, \$267 furnished, \$257 unfurnished. Renovated, \$288 per month.

The rents listed above are subject to change. Any rate increase will be announced prior to the cancellation date for the quarter the lease is to begin.

**A reservation in University Housing is not valid unless the applicant has been admitted to Auburn University.**

Admission to Auburn University does not automatically include a space in University Housing. It is the responsibility of the student to make housing arrangements either on or off campus. Housing information is sent to entering students with their provisional acceptance to the University.

Students may apply for a living space by submitting a Housing Application/Agreement processing fee. Priority for housing is based upon the date of application and the number of quarters applied for.

The Housing Application/Agreement, when accepted, will be for a living space (apartment only, if married) in University Housing. In order to make a reservation, the Housing Application/Agreement must be returned to the Housing Office in Burton Hall by the appropriate deadline with \$115 for the housing deposit (\$100) and the application fee (\$15). The deposit is a combination room reservation/damage/room clearance deposit and is not applicable to rental payment, except on cancellation as provided within the Housing Agreement. The Housing Agreement outlines conditions under which refunds may be made.

University Housing officially opens for occupancy on the day preceding registration and schedule adjustment, and closes and must be vacated by the day following graduation each quarter. Residence halls do not remain open during Thanksgiving and Christmas breaks.

Rent for spaces/apartments in Caroline Draughton Village and Extension apartment communities includes holidays and between quarter breaks.

### Paraprofessional Staff

Each living area is staffed with graduate-level Hall Directors and undergraduate Resident Assistants (RAs). These student advisors are selected from a large pool of applicants for their ability to effectively meet the needs of residents. They undergo an extensive training program, and are responsible for implementing cultural, recreational and educational activities and enforcing University Housing regulations.

### Community Programming Activities

Each hall and apartment community has a Hall Council comprised of elected residents. Hall Councils coordinate special educational, social, cultural and recreational activities for residents. Typical programs include a faculty lecture series, study skills seminars, health and safety programs, computer instruction, peer tutoring, exercise classes, intramural sports activities, cookouts, dances and weekly movies.

The Residence Hall Association (RHA), founded in 1988, provides a vehicle for developing leadership skills and represents the concerns of some 3,400 on-campus residents to the university administration.

### Off-Campus Housing

Privately-owned dormitories, fraternity houses, apartments, duplexes, houses and mobile homes provide housing for students in the greater Auburn-Opelika community.

The University neither inspects nor approves off-campus housing. However, the facilities must conform to federal regulations and to the local code of health and safety regulations.

A listing of off-campus housing facilities may be obtained by writing the offices of Housing and Residence Life, Admissions or Student Affairs.

### Food Services

Auburn University Food Services is a non-profit organization supported entirely by food sales in the various Food Services operations located on campus. The individual operations, varying in size and composition, offer a wide variety of services to meet the needs of students, as well as faculty, staff, and visitors to the Auburn campus. All services offered to students are strictly on a voluntary basis and are available to students living both on and off campus. A brief synopsis of each unit's location and services follows:

**War Eagle Cafeteria**, located in the Foy Student Union, offers complete cafeteria services and a full line snack bar. War Eagle also houses the University Faculty Club and is responsible for all University Catering.

**Terrell Cafeteria**, located in The Hill community, offers full cafeteria services, a bakery outlet, and a snack bar that remains open late night.

**The Kitchen Deli**, located in the Caroline Draughton Extension apartment village, contains a grocery outlet, a bakery outlet, meats and cheeses by the pound, and a take out only snack bar, that remains open late night.

**The Li'l Eagle**, located on the west side of Terrell Cafeteria, provides convenience items for the Hill dorm residents, including baked goods, and grocery items.

**Sewell Cafeteria**, located in the athletic dorm, is operated by Food Services for scholarship athletes.

**The Bakery**, located in Terrell Cafeteria, offers a wide range of freshly baked breads, cookies, cakes, desserts, and pastries shipped daily to our operations. Cakes for special occasions are baked "to order."

**The Hill**, located in the Terrell Complex, serves nightly, Sunday through Thursday.

**Meal Plan - The Chef's Club** - Students have the opportunity to become members of the Chef's Club, Food Services meal plan. As members of the Chef's Club, students may choose between a pre-payment plan or a charge plan. The pre-payment plan or "declining balance plan" allows the student to pay in advance, and budget that amount through the quarter. The charge plan offers students the convenience of charging their meals in any of the food service operations located on campus. There is a yearly membership fee for students joining the charge ascending plan and a minimum deposit for those joining the declining balance plan.

Students may receive credit approval by furnishing a parent's notarized signature as co-signer or by furnishing two credit references. Chef's Club charges are billed on a monthly basis and the total amount must be paid within ten days after the mailing. All Chef's Club bills must be paid before a student can register for the next quarter.

Many students who join the Chef's Club have a charge account for the first time. Chef's Club card holders need to be aware that charges accumulate rapidly and all charges have to be paid. However, students soon learn that, with common sense and discretion, having a Chef's Club card can be both a fun and educational experience.

Additional information about the Chef's Club may be obtained from The Tiger Club Accounts, located in the Food Service Administration Building, Auburn University, Alabama 36849, Telephone: 844-1220.

Cash is accepted at all food operations located on campus. However, an advantage of a Chef's Club card or meal plan is that the student does not have to worry about carrying cash at all times during the quarter.

## Student Health Services

Student Health Services is concerned with the health needs of students while attending Auburn and consists of out-patient services and limited in-patient day care. The out-patient clinic, equipped with modern x-ray and laboratory facilities, is staffed with physicians and nurses who provide primary care to the students. Preventive and educational programs are utilized to help students function at their optimal level and to help prepare them for life after school.

Services, including personal assessment/counseling services, are made available through mandatory health fees which are paid with tuition. Most services are covered; however, fee for service charges may be made on tests and supplies to defray the cost. Services are available to currently enrolled students only.

### Hours of Operation:

Fall, Winter and Spring Quarters ..... Open Monday-Friday 8 a.m. - 8 p.m.  
Saturday 9 a.m. - Noon

Summer Quarter ..... Open Monday-Friday 8 a.m. - 4:45 p.m.

Closed on University Holidays. The Health Center closes at 4:45 p.m. on the day preceding a University holiday until 8 a.m. on the day following the holiday.

Between Quarters service is available on Monday-Friday to students registered for the next quarter 8 a.m.-4:45 p.m.

**Student Insurance:** The Student Government Association sponsors an Accident and Sickness Insurance plan which is available to all registered undergraduate and graduate students, spouses and dependents. The plan provides maximum coverage at minimum cost. Additional information on insurance is available at the Student Health Center. The SGA sponsored health insurance or equivalent is required for all international students, and recommended for all students.

## Financial Aid

The Office of Student Financial Aid at Auburn University provides financial assistance to students who need aid in order to attend the University. The University believes that the amount of aid granted should be based on financial need. To determine need, Auburn uses the ACT Need Analysis System of the American College Testing Program. Students seeking assistance are required to submit the Family Financial Statement to the ACT Program annually. Applications for aid should be completed in January or February of the year prior to the academic year in which the student will need assistance. Application materials and a brochure describing available aid programs may be obtained from the Office of Student Financial Aid, 203 Mary Martin Hall.

The financial aid for which students may apply includes scholarships, grants, loans and part-time employment.

**Scholarships** may be awarded to undergraduates who have shown high academic attainment and promise. Some scholarship programs also require a demonstration of financial need. **Pell Grants** are provided to undergraduate students who can demonstrate need. **Supplemental Educational Opportunity Grants** are available, in limited number, to undergraduates with financial need.

**Perkins Loans, Stafford Loans, and Institutional Loans** provide long-term, low interest loans to students who can demonstrate need.

The **College Work-Study Program** provides part-time employment for students who demonstrate financial need. The **Health Professions Loan Program** makes available long-term loans for students in Pharmacy and Veterinary Medicine.

Graduate students may be eligible for teaching and research assistantships and traineeships. Information is available from the head of the department of the student's major field.



## Employment

Students seeking part-time employment while attending the University should contact the Student Employment Service. As a referral agency, the service assists students in finding employment on campus as well as maintaining bulletin boards with notices of job openings with businesses and industries in the local area. Applicants for employment are referred to prospective employers on the basis of the date of application and the skills of the applicant.

Auburn University employs in excess of 2,500 students on an hourly basis. Students may work a maximum of 30 hours per week while enrolled for six or more quarter hours. The number of hours set by off-campus employers may vary but usually range from 10 to 30 hours per week.

Applications and additional information may be obtained from the Student Employment Service, 300 Mary Martin Hall.

## Student Development Services

**Career Counseling Services** provides confidential assistance to students who need help with career exploration, curriculum selection, study skills, and developmental concerns. A career library is organized to provide accurate and current information about a wide variety of careers. Seminars and workshops of interest to students are offered quarterly. Come by 304 Martin Hall or call 844-4744.

**Testing Services** supports the above counseling process through the provision of a wide variety of inventories and tests as well as the provision of a Study-Partners Program and programmed kits designed to improve study skills. Additionally, Testing Services is a center for many national testing programs such as ACT, SAT, GRE, CLEP, and GED. Come by 315 Martin Hall or call 844-5972.

**Placement Services** assists students and alumni in developing job search skills and offers opportunities to interview with prospective employers for full-time, intern and summer positions. Assistance is provided through individual counseling and workshops to develop job search skills and strategies. Students should visit Placement Services, 400 Martin Hall, one year prior to graduation or call 844-4313.

## Student Activities

**Student Communications** - The following media are subject to supervision by the Board of Student Communications:

- The Auburn Circle*, a general interest magazine
- The Glomerata*, the yearbook issued each spring
- The Auburn Plainsman*, the weekly student newspaper
- The Tiger Cub*, annual student handbook
- WEGL-FM*, the student operated campus radio station

**The Foy Union** - This facility serves as a focal point for co-curricular student activities as well as other campus programs. Housed within the confines are the *Plainsman*, *Glomerata*, *WEGL-FM*, Graduate Student Organization, SGA, IFC, University Program Council, Special Programs, War Eagle Cafeteria, Alpha Phi Omega Book Exchange, a microcomputer lab, a recreation room, a reading room, a wood-working hobby shop, and an exhibit gallery. It also provides lockers for commuters, a lost and found service, several lounge areas, a large screen TV, and an assortment of meeting and banquet facilities. In addition, a University-wide information center and a calendar of events are maintained by the Union staff.

**Langdon Hall** - This auditorium is located next to historic Samford Hall and has a capacity for more than 500 people. This is the site of the weekly UPC free movie. It may be reserved for university-related events by contacting the Reservations Coordinator at 844-1303.

**The University Program Council** - The University Program Council serves as a clearing house for campus programs as well as providing a wide range of programs and entertainment through the following committees: Fine Arts, Major Entertainment, Horizons, Publicity, Special Events, Outdoor Recreation, Indoor Recreation, Films, Religious Affairs, Publications, Technical, Residential-On Campus and Public Relations. The experience students acquire in planning and executing these programs offers them the opportunity to enhance their personal growth and development.

**The University Chapel** - The University Chapel, located on the corner of South College Street and Thach Avenue, is open on weekdays for students, faculty, and staff. It is used for prayer and meditation. The Chapel may be reserved for weddings, religious, and certain other University events by contacting the Reservations Coordinator, Foy Union at 844-1303.

**Recreational Services** - The University offers a well rounded program of intramural athletics and provides a variety of facilities for recreation. Healthful sports, good sportsmanship, and friendly competition are stressed, and all students are urged to participate in recreational activities.

For additional information, consult the Recreational and Intramural Sports handbook which can be obtained at the Intramural Office, located on the second floor of the Student Activities Center.

**Discipline** - Auburn University establishes and enforces only those rules and regulations for conduct as are needed to maintain the well-being of the individual student and the University community. The student, in registering at the University, agrees to conform with its regulations. The student is subject to disciplinary action for violating any section of the Code of Student Discipline, which appears in full in the student handbook, *The Tiger Cub*. Enrollment in no way exempts any student from penalty in case of conviction by public authorities for commission of an illegal act.

**Music, Theatre and Lectures** - Classical concerts, touring play productions, lectures by political figures, news commentators, specialists and prominent scholars, traveling and local shows at the art galleries, opera, ballet and films are among the special events of the year at the University. Many of these activities are free.

The University Concert Choir, the Choral Union, University Singers, the Marching and Concert Bands, the University Orchestra and the Opera Workshop offer opportunities for those who want to perform in Musical groups.

Eight or nine productions each year are offered by the Auburn University Theatre. Students are welcome to audition for any production but priority in casting is given to theatre majors and minors.

The Auburn Studio of the Alabama Public Television Network produces programs which are seen throughout the state on the Alabama Educational Television network. WEGL-FM is the campus radio station, operated by students.

**Special Programs** - The Office of Special Programs provides programming activities for under-represented students including African American students, international students, adult students and students with disabilities. Additional information is available from the office in 118 Foy Union or by calling (205) 844-2353.

## Student Government Association

Upon enrollment at Auburn University, each student becomes a member of the Student Government Association, the official organization of the student body. The SGA is the voice of the students, promoting cooperation and communication with the faculty, administration, the Auburn City Council, and the state legislature. The SGA also promotes the social and academic life of Auburn students.

The SGA is organized into three branches. Headed by the SGA President, the executive branch takes on many special projects through the Executive Cabinet. The legislative branch, the SGA Senate, is made up of representatives of each school and college. The judiciary branch makes final judgment on all decisions involving the Code of Laws. The Student Government Constitution and Laws, published in the *Tiger Cub*, detail the functioning of the student government.

## Organizations

The student handbook, *Tiger Cub*, available in the office of Student Affairs, has a complete listing of the more than 300 chartered and officially recognized organizations on the Auburn campus. Most of these organizations are open to any interested student.

Among the national organizations on campus there are honor societies, national recognition societies, social sororities and social fraternities. They are:

### National Honor Societies

The following members of the Association of College Honor Societies have established chapters at Auburn:

Alpha Epsilon (Agricultural Engineering)	Omicron Delta Kappa (Student Leadership)
Alpha Epsilon Delta (Pre-Medicine)	Omicron Nu (Home Economics)
Alpha Delta Mu (Social Work)	Phi Alpha Theta (History)
Alpha Kappa Delta (Sociology)	Phi Eta Sigma (Freshman Scholarship)
Alpha Lambda Delta (Freshman Scholarship)	Phi Kappa Phi (Senior Scholarship)
Alpha Phi Sigma (Criminal Justice)	Pi Delta Phi (French)
Alpha Pi Mu (Industrial Engineering)	Pi Lambda Sigma (Pre-Law)
Alpha Sigma Mu (Metallurgical & Materials Engineering)	Pi Sigma Alpha (Political Science)
Beta Alpha Psi (Accounting)	Pi Tau Sigma (Mechanical Engineering)
Beta Gamma Sigma (Business)	Psi Chi (Psychology)
Cardinal Key (Junior Leadership)	Rho Chi (Pharmacy)
Chi Epsilon (Civil Engineering)	Sigma Delta Pi (Spanish)
Delta Sigma Rho-Tau Kappa Alpha (Forensics)	Sigma Gamma Tau (Aerospace Engineering)
Eta Kappa Nu (Electrical Engineering)	Sigma Pi Sigma (Physics)
Kappa Delta Pi (Education)	Sigma Tau Delta (English)
Lambda Sigma (Sophomore Leadership)	Tau Beta Pi (Engineering)
Mortar Board (Student Leadership)	Tau Sigma Delta (Architecture & Allied Arts)
Omega Chi Epsilon (Chemical Engineering)	Xi Sigma Pi (Forestry)

### National Recognition Societies

The following national societies have chapters established at Auburn:

Alpha Eta Rho (Aviation)	Order of Omega (Greek Leadership)
Alpha Kappa Psi (Business)	Pershing Rifles (Military)
Alpha Phi Omega (Service)	Phi Delta Kappa (Education)
Alpha Phi Sigma (Criminal Justice)	Phi Delta Chi (Pharmacy)
Alpha Tau Alpha (Agricultural Education)	Phi Lambda Sigma (Pharmacy)
Angel Flight (Air Force ROTC Auxiliary)	Phi Lambda Upsilon (Chemistry)
Arnold Air Society (Air Force ROTC)	Phi Mu Alpha (Music)
Beta Beta Beta (Biology)	Phi Psi (Textiles)
Block and Bridle (Animal Husbandry)	Phi Zeta (Veterinary Medicine)
Capers (Army ROTC Auxiliary)	Pi Alpha Xi (Horticulture)
Delta Nu Alpha (Transportation)	Pi Lambda Theta (Education)
Delta Omicron (Music)	Pi Mu Epsilon (Mathematics)
Delta Sigma Pi (Commerce and Business Administration)	Scabbard and Blade (Military)
Gamma Sigma Delta (Agriculture)	Semper Fidelis (Marine Corps ROTC)
Kappa Epsilon (Pharmacy)	Sigma Delta Chi (Journalism)
Kappa Psi (Pharmacy)	Sigma Gamma Epsilon (Earth Sciences)
Lambda Tau (Medical Technology)	Sigma Lambda Chi (Building Construction)
National Student Speech, Language, Hearing Association (Communication Disorders)	Sigma Theta Tau (Nursing)
Omicron Delta Epsilon (Economics)	Sigma Xi (Scientific Research)
Omicron Kappa Pi (Architecture)	Steerage (Navy ROTC)
	Upsilon Pi Epsilon (Computer Science)

### Sororities

Alpha Chi Omega	Delta Zeta
Alpha Delta Pi	Kappa Alpha Theta
Alpha Gamma Delta	Kappa Delta
Alpha Kappa Alpha	Kappa Kappa Gamma
Alpha Omicron Pi	Phi Mu
Alpha Xi Delta	Pi Beta Phi
Chi Omega	Sigma Kappa
Delta Delta Delta	Zeta Phi Beta
Delta Sigma Theta	Zeta Tau Alpha

The Panhellenic Council coordinates the activities of its member groups.



## Social Fraternities

Alpha Gamma Rho  
Alpha Kappa Lambda (Colony)  
Alpha Phi Alpha  
Alpha Psi (professional)  
Alpha Tau Omega  
Beta Theta Pi  
Chi Phi  
Delta Chi  
Delta Sigma Phi  
Delta Tau Delta  
FarmHouse  
Kappa Alpha Order  
Kappa Alpha Psi  
Kappa Sigma  
Lambda Chi Alpha  
Omega Tau Sigma (professional)

Omega Psi Phi  
Phi Beta Sigma  
Phi Delta Theta  
Phi Gamma Delta  
Phi Kappa Tau  
Pi Kappa Alpha  
Pi Kappa Phi  
Pi Lambda Phi (colony)  
Sigma Alpha Epsilon  
Sigma Chi  
Sigma Nu  
Sigma Phi Epsilon  
Sigma Pi  
Tau Kappa Epsilon  
Theta Chi  
Theta Xi

The Interfraternity Council coordinates the relationships among the member fraternities.

## Related Programs and Activities

### Cooperative Education Program

The Cooperative Education program provides opportunities for students to alternate quarters of academic study with quarters of experience in industry, education, business, and government agencies.

Coordination of study and work combines theory and practice. As a result students find increased meaning in and motivation for their studies. This experience helps to develop a sense of responsibility, judgment, and maturity. Students also benefit financially, since they are paid for their work.

In all four-year undergraduate curricula, the Cooperative Education Program is a five-year plan. A student must complete at least two quarters of the freshman year with an above average scholastic record before "being placed" with an employer. Cooperative Education is offered in all curricula of the Colleges of Agriculture, Business, Education, Engineering, Liberal Arts, and Sciences and Mathematics; in all curricula of the Schools of Forestry and Human Sciences; and Architecture, Building Science, and Industrial Design in the School of Architecture.

A graduate Co-op Program is arranged for certain students in the master's and doctoral programs where employers can provide professional experiences which relate directly to the student's specialized field of study.

Additional information may be secured from the Director, Cooperative Education, Auburn University, Alabama, 36849-5123.

### Independent Study

The Independent Study program provides undergraduate and non-credit correspondence instruction, designed primarily for persons unable to attend college on a regular basis. Courses are also open to enrolled students with their dean's permission. The credit courses parallel those given in the University, award college credit, and are taught by instructors approved by the relevant academic department. Any person is eligible for enrollment, although enrollment is not equivalent to admission to the University.

Upon registration the student receives a course manual and instructions. The student will be required to do assigned reading, submit written assignments, and do possible supplemental work. A supervised final examination is given upon completion of all course assignments.

Although graduate credit cannot be earned by correspondence, certain undergraduate deficiencies may be cleared.

Persons typically enroll in a correspondence course (1) when job or family responsibilities prevent on-campus study; (2) when classroom schedules conflict or a course is unavailable during the quarter it is needed; (3) when a person has been away from formal study for some time and wishes to get back in stride; (4) while at home during the summer break or when participating in a cooperative education program away from the campus.

Courses are available from the following fields: Biology, Economics, English, Geography, Health, Mathematics, Physical Education and Recreation, History, Nutrition and Foods, Political Science, Psychology, Rural Sociology, Sociology, Vocational and Adult Education.

Fees for correspondence courses are listed under Fees and Charges. See also Off-Campus Credit in the section on Academic Regulations. Application forms and a course bulletin are available from Independent Study, University Continuing Education, 100 Mell Hall, Auburn University, Alabama 36849-5611, Telephone: (205) 844-5103.

## Special Clinics

The Speech and Hearing Clinic of the Department of Communication Disorders, primarily a teaching facility, provides service for students with speech, hearing or language problems. These services may involve both diagnoses and treatment of problems.

## Bookstores

The Auburn University Bookstore, located in Haley Center, offers a full line of new and used textbooks and other instructional materials. Alpha Phi Omega service fraternity sponsors a nonprofit bookstore in the Foy Union Building where students may purchase and sell textbooks. Commercial book outlets also exist in the city of Auburn.

## Parking Permit Registration

Parking permit registration for all vehicles, including bicycles, is a part of the enrollment procedure for all students at the beginning of Fall Quarter.

Students who bring a vehicle to Auburn University or to the City of Auburn, including bicycles, after the Fall enrollment period must register for a parking permit at once at the University Police Department. Failure to obtain a parking permit, and to park in the proper zone will subject the operator to certain penalties.

Vehicles, excluding motorcycles and bicycles, of all students, excluding Graduate Teaching Assistants and Graduate Research Assistants, may not travel through, or park on, the main part of campus as defined by Magnolia Avenue, College Street, Samford Avenue, and Donahue Drive from 7 a.m. until 5 p.m., Monday through Friday. Vehicles belonging to freshmen are not allowed to park in Residential ("R" Zone) areas during the zone enforcement hours.

The regulations stated above are subject to modification by the beginning of the Fall Quarter. Specific and current information on parking areas, regulations, controls, commuting, violations and penalties may be found in the *Auburn University Traffic and Parking Regulations*, available at the University Police Department.

# Academic Affairs

Auburn University has 12 schools and colleges in addition to the Graduate School which offer curricula leading to degree programs at the bachelors, masters, specialists and doctoral levels. All schools and colleges except for the schools of Forestry and Nursing have departments which oversee various curricula and provide assistance to students in program and curriculum planning. The schools of Forestry and Nursing are not organized into departments, but these schools offer curricula options and provide students with advising services.

## Academic Programs and Curricula

A list of all university instructional curricula and programs may be obtained in the Office of Academic Affairs and individual program information is available in the various schools and colleges. This section of the *Bulletin* lists the schools and colleges alphabetically and provides information about curricula which are available. In addition, the section provides general descriptions of: the university-wide Core Curriculum; undergraduate English and history requirements; the Honors Program; the library; interdepartmental and interdisciplinary curricula; and the ROTC programs.

## Auburn University's Core Curriculum

Auburn University's Core Curriculum provides a shared learning experience to all Auburn undergraduates. To this effect, the core curriculum is based on the principles of common learning, coherence and integration. Common learning refers to a body of knowledge, skills and emphasis that will be required in every student's program. Coherence is achieved by course sequences and by providing connections among courses. Integration is accomplished through interdisciplinary courses.

The core curriculum seeks to foster the development of educated citizens through its pursuit of three goals:

**The development of the student's analytical skills.** Courses are designed and taught to allow students to discern significant issues and events; ask appropriate questions; approach problems; gather, synthesize and interpret information; critically analyze established positions; and use knowledge creatively for the enhancement of society.

**The nurture of the student's ability to communicate.** The core curriculum requires extensive reading in literature, history and the sciences. The core curriculum promotes writing by requiring courses designed for that purpose and by including writing reinforcement courses in the student's curriculum.

**The encouragement of the student's appreciation for their culture and the world in which they live.** The core curriculum is concerned with the natural world, human behavior, history, moral values, technology, great ideas, aesthetic relationships and society.

### CORE CURRICULUM

Core Requirement	Course Options *	Hours
English Composition (10) .....	EH 110 English Composition or .....	5
	EH 115 Writing Seminar .....	
	EH 400 Advanced Composition or .....	5
	EH 401 Principles of Design in Language or .....	
	EH 404 Technical Writing or .....	
	EH 408 Business and Professional Writing .....	
History (9) .....	HY 101 World History .....	3
	HY 102 World History .....	3
	HY 103 World History .....	3
	or .....	
	HY 121 Tech. and Civilization .....	3
	HY 122 Tech. and Civilization .....	3
	HY 123 Tech. and Civilization .....	3
	or .....	
	U 270 Human Odyssey .....	3
	U 271 Human Odyssey .....	3
	U 272 Human Odyssey .....	3
Literature (10) .....	EH 220 Great Books I .....	5
	EH 221 Great Books II .....	5

\* or Honors Courses

Science (10) .....	A minimum of 10 hours in a single sequence (including laboratories) in biological science, chemistry, geology or physics or SM 101, Concepts of Science and one laboratory science course	
Mathematics (5) .....	At least one course from MH 160, 161, 162, 163 or any math course for which these are a prerequisite	
Philosophy (5) .....	PA 101 Introduction to Logic or ..... 5 PA 102 Introduction to Ethics or PA 218 Ethics and the Health Profession or PA 219 Business Ethics	
Social Science (9) .....	U 101 Society and Culture ..... 3 U 102 Political Economy ..... 3 U 103 Individual and Society ..... 3	
Fine Arts (3) .....	MU 373 Music Appreciation or ..... 3 MU 374 Masterpieces of Music or TH 200 Introduction to Acting and Directing or TH 201 Introduction to the Theatre or AR 360 Appreciation of Architecture or AT 171 History of Art I or AT 172 History of Art II or AT 173 History of Art III	

## Freshman English Composition Requirements

Transfer students who began collegiate study prior to Fall Quarter, 1991 must complete a nine-hour freshman English composition requirement. Credit in freshman English composition earned at another institution may be allowed on transfer as follows, except that no grade less than C will be accepted.

If transfer students have been exempted from freshman English composition at another institution and have had no subsequent coursework in freshman composition, they must still complete Auburn's nine-hour requirement. However, they may take the English Department's Advanced Standing examination for possible exemption with credit for part or all of that requirement. This exam is normally administered on the day of final registration just before each quarter; check with the English Department for the date, place, and time.

If transfer students have been exempted with credit from part of a freshman composition sequence at another institution and have earned a grade of C in subsequent coursework in composition there, they will be allowed credit for the coursework but (depending on the number of hours still needed) will be required to complete EH 103 or EH 102 and 103. In other words, students must complete the freshman English requirement by taking the last course or last two courses in the Auburn sequence. This does not constitute course duplication.

If transfer students have been exempted with credit from part of a composition sequence at another institution and earned an A or B in subsequent coursework there, then both the exemption credit and the course credit will be allowed. If transfer students have been exempted without credit and have earned an A or B in subsequent coursework there, then the course credit will be allowed and, in addition, they will be awarded sufficient Advanced Standing credit to fulfill Auburn's freshman English requirement. This credit will be awarded through the Registrar's Office.

If at another institution transfer students have made a grade of D in an earlier course in freshman English and a C or better in a subsequent course, they are required to take the last course or the last two courses in the Auburn sequence. For example, students who at another institution made a D in EH 101 and a C in EH 102 will be required at Auburn to take either EH 103 or EH 102 and 103, depending on the number of hours they need to complete Auburn's nine-hour requirement. This does not constitute course duplication.

If the transfer students have fewer than three quarter hours of credit in freshman English composition, no credit is allowed. If they have three quarter hours credit in the first course of an English composition sequence, they must complete both EH 102 and EH 103.

If transfer students have four quarter hours of credit in the first course of a three-course sequence, they must complete EH 102 and 103.

If transfer students have either four or five quarter hours of credit in the first course of a two-course sequence, they must complete EH 103.

If transfer students have three semester hours of credit in the first course of a two-course sequence, they must complete EH 103.

If transfer students have earned eight or more quarter hours and have met the first year English composition requirement of the other institution, credit may be allowed for EH 101-102-103, provided the minimum of eight

hours involves no duplication. A total of 12 hours may be accepted toward the graduation requirement when the 12 hours of work represents a continuous course sequence at one school.

Students who need to take EH 101-102-103 and who do not complete EH 101 by the end of Summer 1991 will take EH 110 and EH 103. If they do not complete EH 103 by the end of Winter 1991, they will take at least three hours of coursework selected from among the following: EH 250-251, 253-254-255, 260-261-262, 270-271-272, 400, or EHA 304, 315, 415. However, this coursework may not be work used to meet another requirement in the student's curriculum.

Students who need to take EH 102 and EH 103 and who do not complete EH 102 by the end of Fall 1991 will take EH 103 and three hours of coursework selected from the list in the previous paragraph, or they may take six hours selected from the same list. In either case, the coursework may not be work used to meet another requirement in the student's curriculum.

Students who need to take EH 103 and who do not complete it by the end of Winter 1992 will take three hours of coursework selected from the courses listed above. However, this coursework may not be work used to meet another requirement in the student's curriculum.

Transfer students who began collegiate study Fall Quarter 1991 and thereafter must complete the English composition requirements listed in the University Core. Students earning credit elsewhere for a standard freshman English course of four or five quarter hours or three semester hours will meet the Auburn five-hour freshman English composition requirement.

No student failing a freshman English composition course at Auburn will be permitted to transfer credit from another school to offset that F, but must repeat the course in residence at Auburn (Auburn campus). Furthermore, the student must take all subsequent required freshman composition courses at Auburn (Auburn campus).

Students entering an undergraduate school at Auburn University after receiving a bachelor's degree from another accredited college or university are exempted from meeting these regulations. Persons who have questions about placement or credit which are not covered in this statement should talk to the Director of Freshman English (205 / 844-4620.)

All transfer students should clear their freshman English composition credits with the Registrar as soon as possible after enrolling at Auburn University.

## History Requirements

One of the purposes of the University's Core Curriculum is to give students an understanding of their culture and its backgrounds. Course sequences designed especially for this purpose are those in world history, technology and civilization and human odyssey. Student must earn nine hours of credit in one of these sequences.

Credit in history earned at another institution may be allowed on transfer as shown below in meeting this particular requirement. The student's dean may require a C grade for a course to transfer.

1. If transfer students have three or four quarter hours in the first course of a three-course sequence in world history or western civilization or technology and civilization, they must complete HY 102 and 103 (for world history and western civilization) or HY 122 and 123 (for tech. and civ.). A transfer student who had taken the last course in a similar three-course sequence would take HY 101 and 102 or 121 and 122.

2. If transfer students have four or five quarter hours of credit in the first course of a two course sequence in world history, western civilization or technology and civilization, they must complete HY 103 (for world history and western civilization) or HY 123 (for tech. and civ.). A transfer student who had taken the last course in a similar two-course sequence would take HY 101 or 121.

3. Students who have earned eight or more quarter hours in world history, western civilization or technology and civilization are exempt from the history requirement of the Core Curriculum.

4. Students entering an undergraduate program at Auburn, after earning bachelors degrees from other accredited universities, may be exempted from the history requirements unless their curriculums specify one of the three sequences described in this section.

5. Entering freshmen with no credit hours in history may also elect to take Human Odyssey, U 270, 271 and 272 to fulfill their Core Curriculum history requirement when no sequence is specified in their major.

## The Honors Program

Entering freshmen with extraordinarily high academic aptitudes are eligible for consideration for admission into the University Honors Program. Basic requirements are (1) an ACT composite of 29 or higher or an SAT total of 1250 or higher and (2) a high school grade point average of 3.4 or higher. Students may be considered on the basis of the separate sections of the ACT or SAT and an exceptional high school record. The University Honors Program includes students in the College of Liberal Arts, College of Engineering, School of Architecture, College of Business, College of Education, School of Human Sciences, School of Nursing, and College of Agriculture, College of Sciences and Mathematics and School of Forestry.

The Honors Program provides a group of honors courses in the freshman and sophomore years, individual learning opportunities in the place of some conventional coursework in the junior and senior years, the writing of an honors thesis, and the possibility of accelerated entry into work



on a master's degree. Successful completion of the Honors Program with a minimum overall grade point average of 3.4 is recognized by notation on the student's diploma and permanent record.

## Libraries

The Ralph Brown Draughon Library is the main library; branches are maintained in the School of Architecture, College of Veterinary Medicine, and on the first floor of Haley Center.

Current holdings include more than 1,580,000 bound volumes and more than 1,800,000 items in microformat. The library is a depository for about 1,100,000 government publications and lists among its serial subscriptions more than 12,450 periodicals and 150 newspapers. Special collections include an Alabama Collection, 121,000 maps and other special materials.

Library staff members offer assistance in the location and use of library materials at the General Information and Humanities Desk, and at desks in the Social Sciences Department, Science and Technology Department, Special Collections, and the Microforms and Government Documents Department. Desks are also maintained in the three branch libraries: Veterinary Medicine, Architecture and Haley Center.

A convenient open-shelf arrangement of the main collection makes material readily accessible. Comfortable, well-lighted study areas are available, including carrels which graduate students and faculty may reserve.

## Archives

The University Archives was established in 1964. Its holdings include over 800 archival collections related to Auburn University and Alabama history; 2,000 motion pictures; 1,400 oral history and recorded sound tapes; and approximately 100,000 photographs. The University Archives administers the University's records management and micrographics programs.

## Division of University Computing

University-wide academic and administrative computing services are provided by the Division of University Computing. All requests for use of the Division's mainframe, minicomputer and microcomputer facilities are initiated through heads of academic and administrative departments. Request forms are available in 144 Parker Hall. The Division has four component units: Academic Computing Services, Administrative Computing Services, Technical Support and Operational Support.

Academic Computing Services is the liaison to the end-user community and supports research, instructional, MIS, and office automation applications on the mainframe, the VAX minicomputer and the microcomputer sites. User services, including consulting, training, documentation, technical support and a newsletter, are provided to faculty, staff and students. Software is provided for statistics, text processing, graphics, simulation, spreadsheets, data management, and programming. A number of microcomputer software products are available for university use through site licenses and volume discount agreements. Academic Computing manages the Public Access Computer Sites, containing DOS, UNIX and Macintosh computers, which are available at several locations around campus.

Administrative Computing Services is the liaison to the administrative community and provides systems design, programming, implementation, and data reporting in support of administrative applications. Databases are available on the administrative mainframe to provide student, financial, facilities and personnel information, as well as the library card catalog and office automation systems.

Technical Support is responsible for the systems software on the host computers. This includes the operating systems, security, communications, and data base management systems.

Operational Support operates the host computers, an IBM 3090 and a VAX 6320. Remote print sites are provided in several locations around campus. In addition, all production jobs are processed in this unit.

The Division of University Computing is a service organization, and does not conduct an academic program. Inquiries concerning computer curriculums should be directed to the Dean of Engineering or the Dean of Business; information pertaining to these programs is contained elsewhere in this *Bulletin*.

## Center for Governmental Services

The Center for Governmental Services (CGS) complements the instructional and research programs of Auburn University with the capability to respond positively to public sector needs. Organized to provide coordination and leadership, CGS helps faculty and departments to develop, conduct and administer general extension activities and public policy research. This public service is in the area of county, state, and municipal government finance, personnel, energy, evaluation, and technical assistance. Training activities in budgeting, communication, administration, and management include programs for county government officials, housing authority personnel, municipal personnel, hospital administrators, various professional associations, and local, state, and federal agencies. Through practical and efficient research, training and evaluation services, CGS connects the University and the public sector by contributing to the base of knowledge necessary for informed public policy decision-making.

## Auburn University Aviation

Auburn University Aviation was established in 1942 as a department of the School of Engineering. Operating as a division of the Aerospace Engineering Department, AU Aviation was designed to offer flight education for students of the University, for the Armed Forces, and for the general public; and to serve the citizens of Alabama and the Southern region by providing other needed aviation services. The department cooperates fully with the Federal Aviation Administration and other organizations in conducting special aviation research and education programs. The department is under the direction of the President's Office, reporting to the Executive Vice President, Auburn University.

AU Aviation serves as a laboratory of practical instruction for students enrolled in the curricula of Aviation Management and Aerospace Engineering as well as other University curricula. Flight courses offered lead to FAA private, commercial, multi-engine, instrument, flight instructor, and airline transport certificates and ratings. Flight courses are offered to both University students and the general public.

The University owns and operates the 422-acre Auburn-Opelika Robert G. Pitts Airport. Operated as a State of Alabama public facility, the Airport is conveniently located within three miles of the University campus, with two lighted, 4000-foot, paved runways; a two-story administration building; two large hangars, three five-unit T-hangars, one three-unit T-hangar and one five-unit Planeport. The department currently operates eleven single and multi-engine aircraft, plus a flight simulator.

In addition to flight training, other services such as fuel, maintenance and airplane storage, and aircrew amenities are provided at the airport. AU Aviation also provides air transportation for University faculty and staff on official University business.

The department is fully certified by the FAA as an Air Agency with examining authority for private, commercial, and instrument courses, and multi-engine courses. The department through FAA authorization is able to conduct FAA flight and written examinations.

## Academic Program Assessment

Auburn University is committed to the assessment of the effectiveness of its academic programs. Departments and academic program faculty have selected various procedures for assessing program effectiveness. Some procedures may require that students take comprehensive or exit examinations in their major or examinations at other points during the completion of the requirements for major.

## School and College Curricula

This section of the *Bulletin* lists the schools and colleges alphabetically and provides information about curricula which are available. In addition, the section provides general descriptions of interdepartmental and interdisciplinary curricula and ROTC programs.

### Interdepartmental and Interdisciplinary Curricula

#### Agricultural Engineering (AN)

THE CURRICULUM in Agricultural Engineering is coordinated by the College of Agriculture and the College of Engineering. See the College of Agriculture and the Department of Agricultural Engineering in the College of Engineering for further information.

#### Certificate In Aging Studies

THE CERTIFICATE in Aging Studies is a multi-disciplinary program designed for students interested in problems of aging persons which will give them a general competency in gerontology. Students enrolled in any curricula can pursue additional coursework required for the Certificate. See the School of Human Sciences for further information.

#### Environmental Science (ENS)

THE CURRICULUM in Environmental Science is an interdepartmental program based on the strengths of Auburn University in the engineering, biological and physical sciences. See the Department of Civil Engineering in the College of Engineering for further information.

#### Forest Engineering (FYE)

THE CURRICULUM in Forest Engineering is coordinated by the School of Forestry and the College of Engineering. See the Department of Agricultural Engineering in the College of Engineering for further information.

#### Geological Engineering (GE)

THE CURRICULUM in Geological Engineering is an interdisciplinary curriculum conducted cooperatively by the departments of Civil Engineering and Geology. See the Department of Civil Engineering in the College of Engineering for further information.

#### Materials Engineering (MTL)

THE CURRICULUM in Materials Engineering is an interdisciplinary curriculum conducted cooperatively by departments in the College of Engineering and the College of Sciences and Mathematics. See the Department of Mechanical Engineering in the College of Engineering for further information.

General information about most college and school undergraduate admission, retention and graduation standards as well as other information about the college or school is provided in this *Bulletin*. Each undergraduate academic program which is offered by a school or college is listed with the required and elective courses. The curriculum models which display program requirements are provided as guides for students and advisors to plan the individual student's plan of study. Those courses which are required must be taken by students unless they are given permission to substitute courses by their academic deans.

The university recognizes students may not be able to schedule courses in the year and quarter as presented in the curriculum models. Academic advisors will attempt to help students schedule courses such that students can complete their programs in a timely manner and so that course prerequisites can be met.

Graduate School programs and courses of instruction are listed in the *Graduate Bulletin*. Please contact the Graduate School for further information.

All undergraduate curricula provide for  
six hours of basic and six hours of advanced ROTC.

# College of Agriculture

JAMES E. MARION, *Dean*  
R.L. GUTHRIE, *Associate Dean*  
R.A. VOITTE, *Associate Dean*  
W. J. ALVERSON JR., *Assistant Dean*  
R. DENNIS ROUSE, *Dean Emeritus*

THE COLLEGE OF AGRICULTURE prepares students for careers in agriculture and related professions. Courses provide a broad foundation in the basic sciences, a general knowledge of the applied sciences, and a reasonable number of cultural subjects. Most of the basic science courses are given in the freshman and sophomore years and serve as a basis for a better understanding of the applied or more practical subjects which are usually taken in the junior and senior years.

A curriculum is offered in Agricultural Business and Economics, Agricultural Journalism, Agricultural Science, Agronomy and Soils, Animal and Dairy Sciences, Fisheries Management, Horticulture, Entomology-Integrated Pest Management, Poultry Science and Rural Sociology. If students wish to major in a field where the courses are not prescribed in the catalog, they should consult with the Dean.

The College of Agriculture also furnishes the subject matter training in Agriculture for the curricula of Agricultural Engineering and Agribusiness Education.

Transfer credit will not normally be allowed for any course passed with a grade lower than C at any other college or university.

Transfer credit for agricultural subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit; however, duplication of credit will not be allowed. Equivalency of agricultural subjects will be determined by the Dean's Office; however, students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the Dean of Agriculture in the first quarter of enrollment in the College of Agriculture at Auburn and the examinations must be completed before the middle of the second quarter. Transfer credit in lieu of courses that are considered to be upper division courses in substance at Auburn University will not be accepted from two-year colleges.

## Pre-Veterinary Medicine

It is possible to gain admission to the College of Veterinary Medicine upon completion of the minimum requirements listed below. Students may declare an option upon admission to the College of Agriculture and must declare an option by the end of their freshman year. If students are admitted to the College of Veterinary Medicine after the completion of all the requirements in the first three years of the option, they may obtain a Bachelor of Science degree in the option after completion of the freshman year of the College of Veterinary Medicine.

The minimum requirements for admission to the College of Veterinary Medicine, Auburn University (110 quarter hours), are incorporated in the first three years of the options listed under the following curricula: Animal and Dairy Sciences and Poultry Science.

English Composition .....	10*	Mathematics .....	5*	CH 207, 208 .....	10
Writing Reinforcement .....	0*	Philosophy .....	5*	PS 205, 206, 207 .....	12
World History .....	9*	Social Studies .....	9*	BI 101, 103 .....	10
Literature .....	10*	Fine Arts .....	3*	ADS 322 .....	4
Science .....	10**	CH 103, 104, 105 .....	15	Scientific Electives .....	8

\*For specifics, see Core Curriculum on page 42; however, a senior WR course will be available in the College of Veterinary Medicine for students who entered the DVM program prior to receiving the B.S. degree.

\*\*Science requirement met by Pre-Vet Science requirement.

See also the curriculum in Pre-Veterinary Medicine (PV), College of Sciences and Mathematics.

## Dual Degree Program With Engineering

This program gives students the opportunity to receive two baccalaureate degrees - one in agriculture and one in engineering. Although the program was developed primarily for students desiring a combination of a biological sciences program with an engineering program, it does not preclude the consideration of other Agriculture-Engineering combinations.

In general, students will be enrolled in the College of Agriculture for approximately three years and in the College of Engineering for approximately two years. During the first three years, the students should take those mathematics, physics and chemistry courses necessary to allow

them to transfer to the College of Engineering. Additionally, before transferring to the College of Engineering, they should have completed approximately three-fourths of the total hours required by the College of Agriculture for the awarding of the degree.

To become dual-degree candidates under this program, students must have grade-point averages which indicate the likelihood of satisfactory completion of College of Engineering degree requirements and a recommendation from the Dean of the College of Agriculture. Recommendation should be sought one quarter before time of expected transfer to the College of Engineering.

It is also possible for very highly qualified students to transfer to the College of Engineering following the junior year with the intent of seeking a master's degree rather than a bachelor's degree in one of the engineering disciplines. Consult the Engineering Dean's Office concerning this option.

## Agricultural Business and Economics

The agribusiness sector is dynamic and diverse with employment opportunities existing with firms ranging from the farm firm to those preparing food and fiber for the ultimate consumer and the firms and agencies that serve and oversee the industry. Agribusiness is the largest industry in the U.S., accounting for about a fifth of the total economic output and one of every five jobs. To effectively address issues resulting from the diversity and complexity of today's agriculture, young men and women need strong backgrounds in the business and economic concepts which relate to agriculture and agribusiness. Also, knowledge of the technical aspects of agriculture and a broad-based background in the sciences and liberal arts are desirable. The Agricultural Business and Economics curriculum provides this training and background.

While the AEC student may choose a general program of study, selection of one of three career path options can provide more directed specialized training in Agribusiness Management and Marketing, Farm Management or Natural Resources Management. The Agribusiness option emphasizes training in management, marketing/sales and finance. Employment opportunities range the gamut of the food and fiber system and careers may involve such areas as management, sales, finance, government, public relations or personnel. The Farm Management option provides training in management and decision-making at the farm level along with the technical aspects of production agriculture. Graduates can pursue careers in the farm sector as owner-operators or managers. Employment opportunities for graduates of the Natural Resources Management option will increase over time as resource scarcity, environmental and rural development issues become more critical. Public institutions which are entrusted with managing and safeguarding our natural resource endowment are primary employers of graduates in this area. Students who forego the career paths and opt for a general program of study can design it to help them reach their goals and aspirations and help ensure a rewarding career. Beyond the identified career areas, graduates of the program complete advanced degrees in the discipline and in business and law schools.

### Curriculum in Agricultural Business and Economics (AEC)

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
MH	181 An. Geom. & Cal.*	5	MH	169 Bus. Math w/Cal. Appl. ... or		AEC	200 Ag. Econ. I	5
EH	110 Eng. Comp.	5	MH	162 An. Geom. & Cal.	5	U	103 Ind. in Soc.	3
HY	121 History***	3	U	102 Polit. Econ.	3	HY	123 History***	3
U	101 Soc. & Cult.	3	HY	122 History***	3	BI	102 Plant Biol. or	
			BI	101 Prin. Biol.	5	BI	103 An. Biol.	5
			SOPHOMORE YEAR					
AEC	210 Mic. Comp. App. Ag.	3	AEC	202 Ag Econ. II	5	AEC	301 Agr. Marketing	4
COM	100 Prof. Comm.	3	AC	212 Accounting II	4	RSY	261 Rural Soc.	3
	Ag. Elective I***	5		Ag. Elective II***	4		Core/Fine Arts**	3
AC	211 Accounting I	4	EH	220 Great Books I	5	EH	221 Great Books II	5
			JUNIOR YEAR					
AEC	304 Ag. Finance	4	AEC	307 Ag. Law	4	AEC	530 Ag. Trade	4
BST	215 Intro. Bio. Stat. or		PA	219 Bus. Ethics	5	EH	408 B&P Writ.	5
MN	301 Bus. & Econ. Stat.	5		Career Path Elect.*****	6		Career Path Elect.*****	7
	Ag. Elect. III***	5						
	Career Path Elect.*****	3						



## College of Agriculture

### SENIOR YEAR

AEC 501 Farm Mgt. .... 5	AEC 503 Ag. Prices ..... 4	AEC 505 Ag. Policy ..... 3
AEC 509 Resource Econ. .... 4	AEC 490 Sen Seminar ..... 1	AEC 510 Ag. Bus. Mgt. .... 5
Career Path Elect. .... 3	Career Path Elect. .... 7	Career Path Elect. .... 8
Gen. Elect. .... 3	Gen. Elect. .... 5	

TOTAL — 192 QUARTER HOURS

\*MH 160 may be taken as a general elective.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*One agricultural elective must be selected from each of the following three groupings: (I.) ADS 200 or PH 201; (II.) AN 350-354; and (III.) AY 200, HF 201 or HF 202.

\*\*\*\*HY 101-103 may be substituted.

\*\*\*\*\*Must be selected from the approved listing.

\*\*\*\*\*ROTC may be substituted for the eight hours of general electives and four hours of career path electives.

**Career Path Options.** Undergraduate AEC majors may select one of three career paths, (I. Agribusiness Management and Marketing, II. Farm Management, or III. Natural Resources Economics) or they may opt for a more general degree program by taking courses from all career path listings. Required courses within each career path option are designated by \* and required courses for students selecting the general program are identified by \*\*. A list of career path courses and recommended electives is available from the department head or dean.

**AEC 399, Agricultural Business and Economics Internship.** Up to eight hours credit is available subject to arrangements with approved firms or businesses.

## Agricultural Engineering

The Agricultural Engineering curriculum provides graduates with engineering skills necessary to serve the nation's largest industry - agriculture. In addition to a strong background in mathematics, physical sciences and basic engineering fundamentals, agricultural engineering students receive training in biological agricultural sciences. Through technical electives in the senior year, one can specialize in one or more areas to include soil and water conservation, power and machinery design, electric power and processing, agricultural structures and environment, food engineering, waste management and agricultural pollution control.

The curriculum is coordinated by the College of Engineering and the College of Agriculture. Students register in Engineering and are assigned an academic advisor in Agricultural Engineering. Beginning students should apply for admission to the College of Engineering and complete the Pre-Agricultural Engineering program. For qualified agricultural students who develop an interest in Agricultural Engineering during their freshman year, an alternate course sequence for completion of the Pre-Agricultural Engineering program under the guidance of an Agricultural Engineering advisor is available in the College of Agriculture.

See the College of Engineering section for admission and degree requirements.

### Curriculum in Agricultural Engineering (AN)

#### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH 161 An. Geom. & Cal. .... 5			MH 162 An. Geom. & Cal. .... 5			MH 163 An. Geom. & Cal. .... 5		
CH 103 Fund. Chem. I ..... 4			CH 104 Fund. Chem. II ..... 4			PS 220 Gen. Physics I ..... 3		
CH 103L Gen. Chem. Lab ..... 1			CH 104L Gen. Chem. Lab ..... 1			PS 220L Gen. Physics Lab I ..... 1		
CSE 120 Intro. Engr. Comp. .... 3			EH 110 Eng. Comp. .... 5			PA 102 or 219 Ethics ..... 5		
HY 121 Tech. & Civ. I * ..... 3			HY 122 Tech. & Civ. II * ..... 3			HY 123 Tech. & Civ. III * ..... 3		
ROTC or Free Elect. .... 1			ROTC or Free Elect. .... 1			ROTC or Free Elect. .... 1		

#### SOPHOMORE YEAR

MH 264 An. Geom. & Cal. .... 5			MH 265 Diff. Equations ..... 3			EE 330 An. & Des. Log. Cir. .... 4		
PS 221 Gen. Physics II ..... 3			PS 222 Gen. Physics III ..... 3			EGR 201 Thermodynamics I ..... 3		
PS 221L Gen. Physics Lab II ..... 1			PS 222L Gen. Physics Lab. III ..... 1			EGR 235 Dynamics I ..... 3		
AN 201 Engr. Prin. Bio. Syst. .... 5			EGR 207 Mech. Solids ..... 3			EH 220 Great Books I ..... 5		
EGR 205 Mech. Statics ..... 3			BI 101 Prin. of Biol. .... 5			Core/Fine Arts ** ..... 3		
ROTC or Free Elec. .... 1			ROTC or Free Elec. .... 1			ROTC or Free Elec. .... 1		

#### JUNIOR YEAR

CE 310 Hydraulics I ..... 3			AN 311 Fund. Mob. Eq. Des. .... 4			AN 313 Lnd/Wtr. Con. Eng. .... 3		
EE 302 Intro. to EE I ..... 3			AN 315 Proc. Engr. Bio. Syst. .... 5			AN 316 Elec. Syst. in Ag. .... 4		
AY 307 Gen. Soils ..... 5			EE 302 Intro. to EE II ..... 3			AN 317 Env. Con. Biol. Syst. .... 3		
EH 221 Great Books II ..... 5			EH 404 Tech. Writ. .... 5			AEC 202 Ag. Econ. II ..... 5		
						Tech. Elective ..... 4		

#### SENIOR YEAR

AN 403 Struct. Anal. & Des. .... 3			AN 430 Engr. Des. Bio. Systs I .... 4			AN 530 Egr. Da. Bio. Sys. II .... 4		
AN 414 Irr. Syst. Des. .... 3			IE 360 Engr. Econ. Anal. .... 3			AN/Plant Sci. Elect. .... 4		
AN 418 Wst. Mgt./Util. Systs. .... 4			U 102 Polif. Econ. .... 3			Tech. Elect. .... 5		
AN 509 Hydr. Cont. Syst. .... 3						U 103 Indiv. in Soc. .... 3		
U 101 Soc. & Cult. .... 3								

TOTAL — 207 QUARTER HOURS

\*HY 101, 102, 103 may be substituted.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*Six hours of Advanced ROTC may be substituted for six hours of technical electives.

## Agricultural Journalism

The Agricultural Journalism major provides graduates with training in a wide range of agricultural courses and a strong background in journalism.

Virtually all large agricultural firms, plus scores of agricultural related magazine companies, publish printed material on a regular basis for the general public and/or members of their organization. Editors and writers of such publications often require a specialized knowledge of agricultural subject matter and terminology as well as the ability to practice the requirement of accurate and responsible journalism. Likewise, Cooperative Extension Services and Agricultural Research Information Departments hire a wide variety of agricultural journalism graduates.

### Curriculum in Agricultural Journalism (AJ)

FRESHMAN YEAR		
First Quarter		
U	101 Soc. & Cult. ....	3
BI	101 Prin. of Biol. ....	5
EH	110 Eng. Comp. ....	5
HY	121 Tech. & Civ. I # ....	3
	Elective .....	1
Second Quarter		
U	102 Polit. Econ. ....	3
BI	107 Env. of Biol. ....	5
PA	102 Intro. Ethics *** ....	5
HY	122 Tech. & Civ. II # ....	3
	Elective .....	1
Third Quarter		
ADS	200 Int. A & D Sci. *** ..	5
MH	160 Pre-Cal w/Trig. ....	5
JM	101 Newspaper Style ....	3
HY	123 Tech. & Civ. III # ....	3
	Elective .....	1
SOPHOMORE YEAR		
CH	103 Fund. Chem. ....	4
CH	103L Gen. Chem. Lab ....	1
AY	200 Crop Prod. ....	5
JM	221 Beg. Newswrit. ....	5
	Elective .....	1
EH	220 Great Books I ....	5
CH	104 Fund. Chem. ....	4
CH	104L Gen. Chem. Lab ....	1
JM	313 Reporting ....	5
	Elective .....	1
JUNIOR YEAR		
AEC	202 Ag. Econ. II ....	5
HF	202 Fru. & Veg. Prod. ....	5
JM	321 Newswp. Des. ....	5
COM	100 Prof. Comm. ....	3
	.....	
AEC	210 Mic. App. Ag. ....	or
CSE	100 Intro. to PC ....	3
ADS	321 An. Biochem. Nut. ....	or
ADS	322 Feeds & Fding ....	4-5
EH	Adv. Comp. ** ....	5
	Elective .....	3
SENIOR YEAR		
JM	421 Photo Journ. I ....	5
JM	423 Journ. Wkshp. *** ..	3
JM	435 Mag. Ed./Prod. ....	5
	.....	
AEC	505 Ag. Policy ....	3
JM	304 Pub. Rel. **** ..	5
RTF	330 Broad. Prod. ....	5
	Electives .....	2-3

#### TOTAL — 192 QUARTER HOURS

# HY 101, 102, 103 may be substituted.

\*\* Six quarter hours credit for electives may be substituted for basic ROTC during the freshman or sophomore years.

\*\*\* Students may select one of the following required courses: PA 218 or 219.

\*\*\*\* Typing is a pre-requisite for JM 221 and 313. Students who do not have the typing ability required should defer ADS 200 until the junior year and elect VED 200, Typewriting I, in its place.

\*\*\*\*\* PRCM 304 may be substituted.

\*\* For University Core options to satisfy this requirements, see page 39.

\*\*\* JM 425 may be substituted.

## Agricultural Science (AG)

FRESHMAN YEAR		
First Quarter		
U	101 Soc. & Cult. ....	3
MH	160 Pre-Cal w/Trig. ....	5
EH	110 Eng. Comp. ....	5
HY	121 Tech. & Civ. I # ....	3
	Elective # .....	1
Second Quarter		
HY	122 Tech. & Civ. II # ....	3
CH	103 Fund. Chem. ....	4
CH	103 Chem. Lab ....	1
BI	101 Prin. Biol. ....	5
	Elective .....	1
Third Quarter		
CH	104 Fund. Chem. ....	4
CH	104L Chem. Lab ....	1
ADS	200 Int. An. & Dh. Sci. ....	5
HY	123 Tech. & Civ. III # ....	3
U	102 Polit. Econ. ....	3
	Elective .....	1
SOPHOMORE YEAR		
EH	220 Great Books I ....	5
BI	102 Plant Biol. ....	5
PS	200 Fund. Physics ....	5
	Elective .....	1
	.....	
AEC	202 Ag. Econ. II ....	5
CH	207 Org. Chem. & Lab ....	or
CH	203 Org. Chem. ....	5
BI	103 An. Biol. ....	5
U	103 Indiv. in Soc. ....	3
	Elective .....	1
JUNIOR YEAR		
PH	201 Poultry Sci. ....	4
COM	100 Prof. Com. ....	3
AEC	210 Mic. Comp. Ag. ....	3
ADS	321 An. Bioch. & Nut. ....	5
BY	306 Fund. Plant Phys. ....	5
PLP	309 Gen. Plant Path. ....	5
EHA	404 Tech. Writing ....	5
	.....	
AY	304 Gen. Soils ....	5
	Ag. Engr. Elec. *** ..	4
	Core/Fine Arts ** ....	3
	Elective .....	3

# College of Agriculture

## SENIOR YEAR

AY 400 Fld. Crop Prod. ....	5	AEC 301 Ag. Mkt. ....	4	ADS Elective #####	4
FY 350 For. Wild. Owners ....	5	AY 502 Soil Fert. ....	5	AEC 501 Farm Mgt. ....	5
Ag. Engr. Elec.###	4	JM 315 Basic Journ. ....	3	ENT 502 Econ. Entol. ....	5
Elective .....	2	Seminar ###	1	Elective .....	2
		Elective .....	3		

TOTAL — 192 QUARTER HOURS

# HY 101-103 may be substituted.

## Six quarter hours of credit for electives may be substituted for basic ROTC during the freshman and sophomore years.

### To be selected from AN 350, 351, 352, 353 and 356.

#### To be selected from ADS 380, AEC 490, AY 490, PH 401 or RSY 490.

##### To be selected from ADS 401, 403, 405, 407 or 409.

\*\* For University Core options to satisfy these requirements, see page 39.

## Agronomy and Soils (AY)

Courses are designed to prepare Agronomy graduates for several major areas of endeavor:

- (1) the chemical industry, producers of fertilizers, herbicides and other agricultural chemicals;
- (2) farm-advisory agencies such as soil testing laboratories and other private consultants;
- (3) public farm-advisory agencies such as the Agricultural Extension Service or the Soil Conservation Service;
- (4) Research agencies of corporations, U.S. Department of Agriculture, colleges and universities and State Agricultural Experiment Stations;
- (5) turfgrass industry;
- (6) farming.

Four undergraduate options are available to students in Agronomy and Soils. They are (1) Science Option, for those who plan to pursue graduate work, (2) Production Option, (3) Business Option, and (4) Turf Management Option.

First Quarter		FRESHMAN YEAR		Third Quarter	
		Second Quarter			
CH 103 Gen. Chem. ....	4	BI 101 Prin. of Biol. ....	5	BI 102 Plant Biol. ....	5
CH 103L Gen. Chem. Lab. ....	1	CH 104 Gen. Chem. ....	4	MH 161 An. Geom. & Cal. ....	5
MH 160 Pre-Cal. w/Trig. ....	5	CH 104L Gen. Chem. Lab. ....	1	ADS 200 Intr. A&D Sci. ##	5
AY 200 Crop Prod. ....	5	EH 110 Eng. Comp. ....	5	Elective # .....	1
Elective # .....	1	Elective # .....	1		
		SOPHOMORE YEAR			
CH 207 Org. Chem. ....	4	AEC 202 Ag. Econ. II ....	4	BY 306 Fund. Pitt. Phys. ....	5
CH 207L Org. Chem. Lab. ....	1or	U 101 Soc. & Cult. ....	3	PS 205 Intro. Physics ....	3
CH 203 Org. Chem. ....	5	HY 101 World History ....	3	PS 205L Physics Lab. ....	1or
AY 312 Prin. Weed Sci. ....	5	AY 304 Gen. Soils ....	5	PS 200 Fund. Physics ....	5
EH 220 Great Books I ....	5	Elective # .....	1	EH 221 Great Books II ....	5
Elective # .....	1			Elective # .....	1 or 2
		JUNIOR YEAR			
EHA 408 B&P Writ. ###	5	ZY 300 Genetics ....	5	PLP 309 Plant Path. ....	5
Electives .....	5	Electives .....	5	AY401 Prin. For. Crops ....	5
HY 102 World History ....	3	HY 103 World History ....	3	PA101 Intro. Logic ###	5
U 102 Polit. Econ. ....	3	U 103 Indiv. In Soc. ....	3		
		SENIOR YEAR			
ENT 502 Econ. Entol. ....	5	AEC 210 Mic. Comp. .... or		AY 400 Fld. Cp. Prd. #####	5
Core/Fine Arts **	3	BST 216 Intr. Biol. Comp. ....	3	AY 515 Soil Morph. ....	5
Electives .....	9	AY 502 Soil Fert. ....	5	Electives .....	6
		AY 490 Sr. Seminar ....	1		

TOTAL — 192 QUARTER HOURS

# May use for ROTC.

## Students in Turf will take AY 315.

### May substitute EHA 404.

#### May substitute PA 102 or 219.

##### Not required in Turf option.

\*\* For University Core options to satisfy these requirements, see page 39.

## OPTIONS IN AGRONOMY AND SOILS

### PRODUCTION OPTION

Required Courses: AN 350, AY 506, 508, 510, AEC 501, plus 15 hours of electives.

### TURF MANAGEMENT OPTION

Required Courses: AN 350, 356, HF 221, 521, AY 506, 516, AC 215, MN 310, plus six hours electives. Six hours of advanced ROTC can be substituted for required courses according to the student's interest.

### BUSINESS OPTION

Required Courses: AY 506, 508, AEC 501, 503, AC 215, MN 310, MT 241 or AEC 307, plus six hours of electives. Six hours of advanced ROTC can be substituted for required courses according to the student's interest.

### SCIENCE OPTION

Required Courses: AN 350, MH 161, CH 207 (instead of CH 203), PS 205, CH 105, 204, plus 24 hours of electives, which must include an additional 10 hours of AY courses.

## Animal and Dairy Sciences (ADS)

Two curriculum options are available within the ADS Department to accommodate students with varied career goals and prepare them for leadership careers in livestock and related industries. The Production/Agribusiness/Extension option offers students flexibility in designing a custom-made program by selection of professional electives. Upon completion of this option, graduates should be qualified for career opportunities in livestock production, journalism, extension, livestock feed/nutrition, pharmaceutical industry, sales and merchandising, agricultural finance, governmental and private agencies and industries related to the processing of meat products.

Contemporary animal agriculture is expanding into a "high tech" era which needs graduates with basic science backgrounds to aid in discovery and development of new concepts for animal production. The Pre-Veterinary/Basic-Science (ADPV) option provides students with a foundation in biological and physical science necessary for entry into graduate programs in biotechnology and related disciplines while satisfying prerequisites for veterinary school. Postgraduate studies are necessary for most positions in teaching, extension and research at universities and allied animal industries, as well as areas of biotechnology.

## Agribusiness/Muscle Foods/Production Options (ADS)

First Quarter			FRESHMAN YEAR			Third Quarter		
ADS	110 Orient. An. Dal. Sc.	1	BI	101 Gen. Biol.	5	AEC	202 Ag. Econ. II	5
ADS	200 Intr. An. Dal. Sc.	5	COM	100 Prof. Comm.	3	BI	103 An. Biol.	5
EH	110 Eng. Comp.	5	PA	102 Intr. Ethics	5	PS	200 Gen. Physics	5
MH	160 Pre-Cal w/Trig.	5	U	102 Soc. & Cult.	3		ROTC or Elect.	1
	ROTC or Elect.	1		ROTC or Elect.	1			
			SOPHOMORE YEAR					
CH	103 Fund. Chem. I	4	ADS	260 Gwth. & Body Comp.	4	AEC	210 Microcomp.	3
CH	103L Gen. Chem. Lab	1	CH	104 Fund. Chem. II	4	CH	203 Org. Chem.	5
EH	220 Great Books I	5	CH	104L Gen. Chem. Lab	1	HY	103 World Hist. III	3
HY	101 World Hist. I	3	HY	102 World Hist. II	3	ZY	300 Genetics	5
U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3		ROTC or Elect.	1
	ROTC or Elect.	1		ROTC or Elect.	1			
			JUNIOR YEAR					
ADS	321 An. Bloch. Nutr.	5	ADS	322 Feeds & Feeding	4	ADS	370 Meat Sci.	5
ADS	350 An. Breeding	4	ADS	361 Repro. Phys.	5	ADS	380 Under. Sem.	1
MU	373 Music Appr.	3	EH	221 Great Books I	5	COM	311 Pers. Discourse	5
ZY	316 An. Physiol.	5		Elective	1	MB	300 Gen. Microbiol.	5
			SENIOR YEAR					
ADS	Prod. Requirement*	4		Electives	15		Electives	14
AEC	510 Ag. Bus. Mgt.	5						
EH	404 Tech. Writ.	5						
	Elective	1						

## TOTAL — 192 QUARTER HOURS

\*One of the following courses must be taken: ADS 401, 403, 405, 407, 409, 470.

## Pre-Veterinary Medicine/Basic Science Option (ADPV)

The curriculum listed in the first nine quarters (141 quarter hours) will satisfy the minimum requirements for admission to the College of Veterinary Medicine. Satisfactory completion of the remaining requirements of the Animal-Dairy Science curriculum or completion of one year in the Veterinary Medicine curriculum entitles the student to the B.S. degree in Animal and Dairy Sciences.

First Quarter			FRESHMAN YEAR			Third Quarter		
ADS	110 Or. An. & Dairy Sci.	1	BI	101 Gen. Biol.	5	ADS	200 Intr. An. Dairy Sci.	5
CH	103 Fund. Chem. I	4	CH	104 Fund. Chem. II	4	BI	103 An. Biol.	5
CH	103L Gen. Chem. Lab	1	CH	104L Gen. Chem. Lab	1	CH	105 Fund. Chem. III	4
EH	110 Eng. Comp.	5	PA	102 Intr. Ethics	5	CH	105L Gen. Chem. Lab	1
MH	160 Pre-Cal w/Trig.	5		ROTC or Elect.	1		ROTC or Elect.	1
	ROTC or Elect.	1						
			SOPHOMORE YEAR					
CH	207 Org. Chem.	4	CH	208 Org. Chem.	3	EH	221 Great Books II	5
CH	207L Org. Chem. Lab	1	CH	208L Org. Chem. Lab	2	PS	207 Intr. Physics III	3
HY	101 World Hist. I	3	EH	220 Great Books II	5	PS	207L Physics Lab	1
MU	373 Music Appr.	3	PS	206 Intr. Physics II	3	ZY	300 Genetics	5
PS	205 Intr. Physics I	3	PS	206L Physics Lab	1		ROTC or Elect.	1
PS	205L Physics Lab	1		ROTC or Elect.	1			
	ROTC or Elect.	1						

## JUNIOR YEAR

ADS 321 An. Bloch. Nutr. ....	5	ADS 260 Gwth. & Body Comp. ....	4	ADS 370 Meat Sci. ....	5
ADS 350 An. Breeding ....	4	ADS 322 Feeds & Feeding ....	4	ADS 380 Under. Sem. ....	1
COM 100 Prof. Comm. ....	3	HY 102 World Hist. II ....	3	EH 404 Tech. Writ. ....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	HY 103 World Hist. III ....	3
		Elective .....	1	U 103 Indiv. in Soc. ....	3

## SENIOR YEAR

ADS 4XX Prod. Require.* ....	4	ADS 361 Repro. Phys. ....	5	AEC 210 Microcomp. ....	3
AEC 202 Ag. Econ. II ....	5	COM 311 Pers. Discourse ....	5	MB 300 Gen. Microbiol. ....	5
ZY 316 An. Physiol. ....	5	Electives .....	6	Electives .....	9
Electives .....	3				

## TOTAL — 192 QUARTER HOURS

\*One of the following courses must be taken: ADS 401, 403, 405, 407, 409, 470.

## Entomology - Integrated Pest Management (ENTI)

The Entomology - Integrated Pest Management curriculum in the Department of Entomology is designed to provide the student with a broad base of training in the pest sciences. This option will prepare the student for employment in many phases of animal and plant agriculture. It also can be used as the basis for advanced study in such fields as entomology, plant pathology, nematology and weed science.

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
BI 101 Gen. Biol. ....	5	BI 102 Plant Biol. ....	5	BI 103 An. Biol. ....	5
CH 103 Fund. Chem. I ....	4	CH 104 Fund. Chem. II ....	4	EH 110 Eng. Comp. ....	5
CH 103L Gen. Chem. Lab ....	1	CH 104L Gen. Chem. Lab ....	1	HY 101 World History ....	3
Core/Fine Art ** .....	3	MH 161 An. Geom. & Cal. *** ..	5	Elective .....	1
Elective * .....	1	Elective .....	1		

## SOPHOMORE YEAR

ENT 304 Gen. Entomology ....	5	EH 220 Great Books I ....	5	EH 221 Great Books II ....	5
HY 102 World History ....	3	CH 207 Org. Chem. ....	4	CH 208 Org. Chem. ....	3
PS 200 Found. Physics ....	5	CH 207L Org. Chem. Lab ....	1	CH 208L Org. Chem. Lab ....	2
Elective .....	1	HY 103 World History ....	3	AY 304 Gen. Soils ....	5
		Elective .....	1	Elective .....	1

## JUNIOR YEAR

Core/Philosophy** .....	5	ZY 300 Genetics ....	5	MB 300 Microbiol. ....	5
AY 312 Prin. Weed Sci. ....	5	ZY 303 Prin. Evol. & Syst. ....	5	ENT 510 Insect Ident. ....	5
ZY 306 Prin. Ecol. ....	5	ZY 251 Physiology ....	5	EH 404 Tech. Writing ** .....	5
				Elective .....	3

## SENIOR YEAR

AEC 210 Micro. in Ag. ....	3	AY 200 Crop Prod. ....	5	PLP 309 Gen. Plant Path. ....	5
ENT 406 Mthds. Ins. Pest Mgt. ....	5	ENT 503 Toxicology ....	5	ENT 405 App. Entomol. ....	5
BST 215 Intr. Biol. Stat. ....	5	ENT 404 Ins. Alf. Man & An. ....	5	AEC 202 Ag. Econ. II ....	5
Elective .....	2			Elective .....	2

## TOTAL — 192 QUARTER HOURS

\*Six quarter hours credit for electives may be substituted for basic ROTC during the freshman and sophomore years.

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*If the student is not prepared for MH 161, MH 160 may be taken for elective credit.

## Fisheries and Allied Aquacultures

The curricula in Fisheries and Allied Aquacultures have both Science and Production Options that prepare students for careers in sport fish management, aquatic ecology and aquaculture.

## Curriculum in Fisheries Management (FAA)

## SCIENCE OPTION

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biol. ....	5	BI 102 Plant Biol. ....	5	BI 103 An. Biol. ....	5
CH 103 Fund. Chem. I ....	4	MH 161 An. Geom. & Cal. ....	5	PS 205 Intr. Phys./Lab ....	4
CH 103L Gen. Chem. Lab ....	1	CH 104 Fund. Chem. II ....	4	EH 110 Eng. Comp. ....	5
Elective* .....	6	CH 104L Gen. Chem. Lab ....	1	Elective* .....	1
		Elective* .....	1		

## SOPHOMORE YEAR

Core/History** .....	3	Core/History** .....	3	Core/History** .....	3
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	COM 100 Prof. Comm. ....	3
PS 206 Intr. Phys./Lab ....	5	CH 207 Org. Chem. ....	5	CH 208 Org. Chem. Lab ....	5
Elective* .....	3	Elective* .....	3	Core/Fine Arts** .....	3
				Elective* .....	3



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## JUNIOR YEAR

FAA 538 Gen. Ichthy. ....	5	FAA 537/9 Fish Biol. ....	or	FAA 401 Limnology ....	5
ZY 251 Physiol. ....	5	FAA 511 Prin. Aquacult. ....	5	ZY 306 Prin. Ecology ....	5
AEC 202 Ag. Econ. II ....	5	EH 404 Tech. Writ. ....	5	U 103 Indiv. In Soc. ....	3
U 101 Soc. & Cult. ....	3	AEC 210 Microcomp. App. ....	3	PE Swimming ....	2
		U 102 Polit. Econ. ....	3		

## SENIOR YEAR

FAA 393 Seminar ....	1	FAA 454 Hatch Man. I ....	5	BST 501 Biostat. ....	5
FAA 423 Water Qual. ....	5	MB 300 Gen. Micro. ....	5	FAA 455 Hatch Man. II ....	5
ZY 300 Genetics ....	5	ZY 401 Invert. Zool. ....	5	Core/Philosophy** ....	5
EN 304 Gen. Entomol. ....	5	Elective* ....	1	Elective* ....	1

## TOTAL — 192 QUARTER HOURS

\*Six quarter hours for electives may be substituted for basic ROTC during the freshman and sophomore years

\*\*For University Core options to satisfy these requirements, see page 39.

## PRODUCTION OPTION

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biol. ....	5	BI 102 Plant Biol. ....	5	BI 103 An. Biol. ....	5
CH 103 Fund. Chem. I ....	4	EH 110 Eng. Comp. ....	5	CH 203 Org. Chem. ....	5
CH 103L Gen. Chem. Lab. ....	1	CH 104 Fund. Chem. II ....	4	MH 160 Pre-Cal. w/Trig. ....	5
Elective* ....	6	CH 104L Gen. Chem. Lab. ....	1	Elective* ....	1

### SOPHOMORE YEAR

Core/History** ....	3	Core/History** ....	3	Core/History** ....	3
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	COM 100 Prof. Com. ....	3
MB 300 Gen. Microbiol. ....	5	PS 200 Fund. Physics ....	5	AY 304 Gen. Soils ....	5
Elective* ....	3	Elective* ....	3	Core/Fine Arts** ....	3
				Elective* ....	2

## JUNIOR YEAR

FAA 538 Gen. Ichthy. ....	5	FAA 537/9 Fish Biol. ....	or	FAA 401 Limnology ....	5
ADS 321 An. Biochem. ....	5	FAA 511 Prin. Aquacult. ....	5	ZY 306 Prin. Ecol. ....	5
AEC 202 Ag. Econ. II ....	5	EH 404 Tech. Writ. ....	5	U 103 Indiv. In Soc. ....	3
U 101 Soc. & Cult. ....	3	AEC 210 Microcomp. App. ....	3	PE Swimming ....	2
		U 102 Polit. Econ. ....	3		

## SENIOR YEAR

FAA 393 Seminar ....	1	FAA 454 Hatch Man. I ....	5	FAA 402 Fish Hth. Man. ....	5
FAA 423 Water Qual. ....	5	AN 352 Tract. Engr. Tech. ....	4	FAA 455 Hatch Man. II ....	5
AEC 501 Farm Man. ....	5	Electives* ....	7	Core/Philosophy** ....	5
Elective* ....	5				

## TOTAL — 192 QUARTER HOURS

\*Six quarter hours for electives may be substituted for basic ROTC during the freshman and sophomore years

\*\*For University Core options to satisfy these requirements, see page 39.

## Horticulture (HF)

Courses are designed to prepare Horticulture graduates for the following careers: nursery manager, landscape designer, landscape installer, landscape maintenance, interior landscaping, plant propagator, city or state horticulturist, extension horticulturist, horticulture writer, horticulture teacher, florist shop manager, greenhouse manager, vegetable producer, orchard manager, chemical company representative, seed company representative.

Three undergraduate options are available to students in Horticulture: Landscape Horticulture, Ornamental Production and Fruit and Vegetable Crop Production.

Horticulture also offers a masters degree which leads to professional positions in teaching, research and extension.

## Ornamental Production Option

This option provides professional and basic knowledge and develops basic skills in Ornamental Crop Production, preparing students for careers in the production of greenhouse and nursery grown crops.

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biol. ....	5	BI 102 Plant Biol. ....	5	MH 160 Pre-Cal. w/Trig. ....	5
EH 110 Eng. Comp. ....	5	CH 103 Fund. Chem. I ....	4	CH 104 Fund. Chem. II ....	4
HF 101 Intr. Hort. ....	3	CH 103L Gen. Chem. Lab. ....	1	CH 104L Gen. Chem. Lab. ....	1
U 101 Soc. & Cult. ....	3	HY 101 World Hist. * ....	3	HY 102 World Hist. ....	3
Elective* ....	1	U 102 Polit. Econ. ....	3	U 103 Indiv. In Soc. ....	3
		Elective* ....	1	Elective* ....	1

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### SOPHOMORE YEAR

HY 103 World Hist. .... 3	Core/Philosophy ** ..... 5	HF 224 Plant Prop. .... 5
AEC 210 Micro. App. in Ag. .... 3	EH 220 Great Books I ..... 5	EH 221 Great Books II ..... 5
AC 215 Fund. G&C Acct. .... 5	COM 100 Prof. Comm. .... 3	AEC 202 Ag. Econ. II ..... 5
HF 323 Grhhouse. Env. Con. .... 5	Core/Fine Arts ** ..... 3	Elective ..... 1
Elective ..... 1	Elective ..... 1	

### JUNIOR YEAR

Prof. Elec. *** ..... 10	EHA 408 B&P Writ. .... 5	AY 307 Gen. Soils ..... 5
HF 222 Arboriculture ..... 5	BY 306 Plant Physiol. .... 5	PLP 309 Plant Pathol. .... 5
	HF 223 Evergreen Shrubs ..... 5	Electives ..... 5

### SENIOR YEAR

ENT 502 Econ. Entomol. .... 5	HF 523 Nurs. Mgt. .... 5	HF 522 Flor. Crop Prod. .... 5
AY 315 Turf Mgt. .... 5	Electives **** ..... 10	HF 410 Herb. Plants ..... 5
HF 390 Seminar ..... 1		Electives ..... 5
Electives ..... 5		

### TOTAL — 192 QUARTER HOURS

\*Students may take HY 121, 122, 123 in place of HY 101, 102, 103.

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*Students are required to take two of the following: HF 201, 308, 415, ZY 300.

\*\*\*\*Students may elect to take up to six hours of ROTC as elective hours.

## Fruit and Vegetable Option

This option is designed to prepare the student for a future in the fruit or vegetable industry.

### FRESHMAN YEAR

#### First Quarter

BI 101 Prin. Biol. .... 5
EH 110 Eng. Comp. .... 5
HF 101 Intr. Hort. .... 3
U 101 Soc. & Cult. .... 3
Elective ..... 1

#### Second Quarter

BI 102 Plant Biol. .... 5
CH 103 Fund. Chem. I ..... 4
CH 103L Gen. Chem. Lab ..... 1
HY 101 World Hist. * ..... 3
U 102 Polit. Econ. .... 3
Elective ..... 1

#### Third Quarter

MH 160 Pre-Cal. w/Trig. .... 5
CH 104 Fund. Chem. II ..... 4
CH 104L Gen. Chem. Lab ..... 1
HY 102 World Hist. .... 3
U 103 Indiv. in Soc. .... 3
Elective ..... 1

### SOPHOMORE YEAR

HY 103 World Hist. .... 3	Core/Philosophy ** ..... 5	HF 221 Lndscp. Garden. .... or
CH 207 Org. Chem. .... 4	EH 220 Great Books I ..... 5	HF 224 Plant Prop. .... 5
CH 207L Org. Chem. Lab ..... 1 or	JM 315 Basic Journ. .... 3	EH 221 Great Books II ..... 5
CH 203 Org. Chem. .... 5	Core/Fine Arts ** ..... 3	AEC 202 Ag. Econ. II ..... 5
AEC 210 Micro. App. in Ag. .... 3		
HF 201 Orch. Mgt. .... 5		
Elective ..... 1		

### JUNIOR YEAR

HF 308 Veg. Crops ..... 5	AY 304 Gen. Soils ..... 5	PLP 309 Plant Path. .... 5
COM 100 Prof. Comm. .... 3	BY 306 Fund. Plant. Phys. .... 5	ZY 300 Genetics ..... 5
EH 408 B&P Writ. .... 5	AEC 301 Ag. Mktg. .... 4	HF Prof. Elec. *** ..... 5
Electives ..... 3		

### SENIOR YEAR

HF 390 Seminar ..... 1	HF Prof. Elec. *** ..... 5	HF Prof. Elec. *** ..... 5
AEC 501 Farm Mgt. .... 5	Electives **** ..... 6	Elective ..... 5
AY 312 Weed Sci. .... 5	AN 350 Soil & Water Tech. .... 4	ENT 502 Econ. Entomol. .... 5
Electives ..... 6		Electives ..... 6

### TOTAL — 192 QUARTER HOURS

\*Students may take HY 121, 122, 123 in place of HY 101, 102, 103.

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*Students are required to take three of the following Horticulture professional electives: HF 501, 504, 505, 506.

\*\*\*\*Students may elect to take up to six hours of ROTC as elective hours.

## Landscape Horticulture Option

This option provides professional and basic knowledge and develops basic skills in Landscape Design, preparing the student for a career in landscape design and/or landscape installation and/or landscape maintenance.

### FRESHMAN YEAR

#### First Quarter

BI 101 Prin. Biol. .... 5
EH 110 Eng. Comp. .... 5
HF 101 Intr. Hort. .... 3
U 101 Soc. & Cult. .... 3
Elective ..... 1

#### Second Quarter

BI 102 Plant Biol. .... 5
CH 103 Fund. Chem. I ..... 4
CH 103L Gen. Chem. Lab ..... 1
HY 101 World Hist. * ..... 3
U 102 Polit. Econ. .... 3
Elective ..... 1

#### Third Quarter

MH 160 Pre-Cal. w/Trig. .... 5
CH 104 Fund. Chem. II ..... 4
CH 104L Gen. Chem. Lab ..... 1
HY 102 World Hist. .... 3
U 103 Indiv. in Soc. .... 3
Elective ..... 1

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## SOPHOMORE YEAR

HY 103 World History .....	3	COM 100 Prof. Comm. ....	3	HF 224 Plant Prop. ....	5
BY 308 Plant Phys. ....	5	Core/Philosophy ** .....	5	AC 215 Fund. G&C Acct. ....	5
AEC 210 Micro. App. in Ag. ....	3	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
AEC 202 Ag. Econ. II .....	5	Elective .....	1	Elective .....	1
Elective .....	1	Core/Fine Arts ** .....	3		

## JUNIOR YEAR

HF 222 Arboriculture .....	5	PLP 309 Plant Path. ....	5	AY 307 Gen. Soils .....	5
HF 412 Int. Plntscing. ....	3	HF 223 Evergreen S&V .....	5	HF 221 Deciduous S&V .....	5
EH 408 B&P Writ. ....	5	Electives .....	5	Electives .....	5
Electives .....	2				

## SENIOR YEAR

ENT 502 Econ. Entomol. ....	5	HF 521 Lndscp. B, E & M .....	5	HF 410 Herb. Plants .....	5
AY 315 Turfgrass Mgt. ....	5	Prof. Elec. *** .....	5	Prof. Elec. *** .....	5
HF 427 Intermed. Des. ....	5	Electives *** .....	5	Electives .....	5
HF 390 Seminar .....	1				

## TOTAL — 192 QUARTER HOURS

\*Students may take HY 121, 122, 123 in place of HY 101, 102, 103.

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*Students are required to take two of the following: AN 356, LA 342, HF 415, 428, 523

\*\*\*\*Students may elect to take up to six hours of ROTC as elective hours.

## Poultry Science (PH)

The program is designed to allow students to choose courses in science and business. In most cases students anticipating study beyond the B.S. degree should choose electives for the science option. The electives in the business area provide the student opportunity to prepare for sales, service and related agribusiness professions.

### First Quarter

MH 160 Pre-Cal w/Trig. ....	5
CH 103 Fund. Chem. I .....	4
CH 103L Chem. Lab .....	1
PH 201 Poultry Sci. ....	4
Gen. Elective * .....	2

### FRESHMAN YEAR

#### Second Quarter

BI 101 Gen. Biol. ....	5
EH 110 Eng. Comp. ....	5
CH 104 Fund. Chem. II .....	4
CH 104L Chem. Lab .....	1
Gen. Elective * .....	1

### Third Quarter

BI 103 An. Biol. ....	5
COM 100 Prof. Comm. ....	3
CH 203 Org. Chem. ....	5
Gen. Elective * .....	2

### SOPHOMORE YEAR

HY 101 World Hist. *** .....	3	HY 102 World Hist. *** .....	3	HY 103 World Hist. *** .....	3
AEC 210 Micro. in Ag. ....	3	PS 200 Found. Physics .....	5	AEC 202 Ag. Econ. II .....	5
Core/Philosophy ** .....	5	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
Gen. Elective * .....	2	Gen. Elective * .....	1	Gen. Elective * .....	1

## JUNIOR YEAR

ADS 321 An. Bioch. & Nutr. ....	5	ZY 300 Genetics .....	5	AEC510 Ag. Bus. Mgt. ....	5
EH 404 Tech. Writ. # .....	5	PH 501 Com. Meat Prod. ## .....	4	PH511 Proc. & Mkt. ## .....	4
MB 300 Microbiology .....	5	Gen. Elective * .....	2	Prof. Electives ### .....	7
Gen. Elective * .....	1	Prof. Elective ### .....	4		

## SENIOR YEAR

PH 401 Jr.-Sr. Seminar .....	1	PH 502 Com. Egg Prod. ## .....	3	PH508 Poul. Dis. Par. ## .....	4
PH 505 Poul. Feed. ## .....	5	PH 515 Avian Repro. Phy. ## .....	4	PH506 Poul. Breed Fert. ## .....	5
ZY 318 Phys. Dom. An. ....	5	Prof. Electives ### .....	9	Prof. Electives ### .....	7
Core/Fine Arts ** .....	3				
Prof. Electives ### .....	2				

## TOTAL — 192 QUARTER HOURS

\*A minimum of 12 credit hours of general electives must be taken.

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*HY 121, 122, 123 may be substituted.

##EH 408 may be substituted.

##Upper-level Poultry Science courses are generally taught every other year. It is the student's responsibility to take these courses when they are offered.

###A minimum of 29 credit hours of professional electives must be taken in consultation with the student's advisor from a list available in the office of the dean.

**Poultry Science Pre-Veterinary Medicine Option (PH-PV)**

The curriculum listed for the first nine quarters (144 quarter hours) satisfies minimum requirements for admission to the College of Veterinary Medicine. Completion of the remaining requirements of the Poultry Science curriculum or completion of one year in the Veterinary Medicine curriculum entitles the student to the B.S. degree in Poultry Science.

**FRESHMAN YEAR**

First Quarter			Second Quarter			Third Quarter		
HY	101 World Hist. *	3	HY	102 World Hist. *	3	HY	103 World Hist. *	3
CH	103 Fund. Chem. I	4	MH	160 Pre-Cal. w/Trig.	5	CH	105 Fund. Chem. III	4
CH	103L Chem. Lab	1	CH	104 Fund. Chem. II	4	CH	105L Chem. Lab	1
PH	201 Poul. Sci.	4	CH	104L Chem. Lab	1	EH	110 Eng. Comp.	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	ROTC or Gen. Elec. ##	1		ROTC or Gen. Elec. ##	1		ROTC or Gen. Elec. ##	1

**SOPHOMORE YEAR**

EH	220 Great Books I	5	BI	101 Gen. Biol.	5	BI	103 An. Biol.	5
CH	207 Org. Chem.	4	CH	208 Org. Chem.	4	EH	221 Great Books II	5
CH	207L Org. Chem. Lab	1	CH	208L Org. Chem. Lab	1	PS	207 Intr. Phys. III	3
PS	205 Intr. Phys. I	3	PS	206 Intr. Phys. II	3	PS	207L Intr. Phys. Lab	1
PS	205L Physics Lab	1	PS	206L Physics Lab	1		ROTC or PH El. ***	1
	ROTC or Gen. Elec. ##	1		ROTC or Gen. Elec. ##	1	PH	Elective ***	1

**JUNIOR YEAR**

ZY	316 Phys. Dom. An.	5	EH	404 Tech. Writ. ###	5	ZY	300 Genetics	5
	Core/Philosophy **	5	ADS	321 An. Bloch. Nutr.	5	ADS	322 Fds. & Feeding	4
	Core/Fine Arts **	3	PH	Elective ***	6	MB	300 Microbiology	5
PH	Elective ***	3				PH	Elective ***	2

**SENIOR YEAR**

COM	100 Prof. Com.	3	AEC	202 Ag. Econ. II	5	AEC	510 Ag. Bus. Mgt.	5
AEC	210 Micro. in Ag.	3	PH	Elective ***	6	PH	Elective ***	6
	Gen. Elective ##	5		Gen. Elective ##	5		Gen. Elective ##	5
PH	Elective ***	5						

**TOTAL — 192 QUARTER HOURS**

\*HY 121, 122, 123 may be substituted.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*Poultry Science electives must be selected from the following: PH 401, 501, 502, 505, 506, 508, 511, 515. To meet these requirements for the B.S. degree in Poultry Science in four years, at least 13 hours of PH electives must be completed by the end of the junior year.

#PA 101, 218 or 219 may be substituted.

##Twenty hours of general electives will be selected in consultation with the student's advisor.

###EH 406 may be substituted.

**Rural Sociology**

The Rural Sociology curriculum emphasizes the application of scientific knowledge to human problems. Course sequence provides a fundamental preparation in the humanities, mathematics and the sciences, as well as in the basics of production agriculture. The core of the curriculum is comprised of a major in rural sociology with broad exposure to agricultural business and production in rural areas.

Human services occupations represent an area of expanding employment opportunity. Graduates are qualified for work involving administration of state and federal programs designed to serve the elderly, handicapped, poor, youth, unemployed and others. Employment opportunities exist in regional and urban planning units, agricultural agencies, agribusiness firms and other organizations desiring employees with human relations as well as agricultural and economic skills.

**Curriculum in Rural Sociology (RSY)****FRESHMAN YEAR**

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5		Core/Philosophy **	5	ADS	200 Intr. An. & D. Sc.	5
BI	101 Prin. Biol.	5	BI	102 Plant Biol. ***	5	MH	161 An. Geom. & Cal. #	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
HY	101 World Hist. *	3	HY	102 World Hist.	3	HY	103 World Hist.	3

**SOPHOMORE YEAR**

EH	220 Great Books I	5	EH	221 Great Books II	5		Core/Fine Arts **	3
AEC	200 Ag. Econ. I	5	AEC	202 Ag. Econ. II	5	AY	200 Crop Prod. ##	5
RSY	261 Intr. Rur. Soc.	3	RSY	362 Comm. Org.	4	SY	200 Statistics	or
AEC	210 Microcomp. in Ag.	3	COM	100 Prof. Comm.	3	BST	215 Intr. Bio. Stat.	5
							Gen. Elect. ###	3

# College of Agriculture

## JUNIOR YEAR

SY 204 Soc. Behav. ....	5	AEC 301 Ag. Mkt. ....	4	AEC 304 Ag. Finance ....	4
RSY 370 Mthds. Soc. Res. ....	5	EH 408 B&P Writ. ....	5	RSY 498 Dir. Fld. Exp. ....	5
Gen. Elective ....	3	Gen. Elective ....	4	Gen. Elective ....	4
Ag. Elective ### ....	3	Ag. Elective ....	3	Ag. Elective ....	3

## SENIOR YEAR

RSY 562 Soc. Com. Dev. ....	5	RSY 561 Rural Soc. ....	5	RSY 565 Soc. Nat. R&E ....	5
SY 502 Soc. Theory ....	5	AEC 510 Ag. Bus. Mgt. ....	or	Gen. Elective ....	5
Gen. Elective ....	6	AEC 501 Farm Mgt. ....	5	Ag. Elective ....	5
.....		Gen. Elective ....	3	.....	
.....		Ag. Elective ....	3	.....	

## TOTAL — 192 QUARTER HOURS

\*Select one of three sequences: World History HY 101-102-103 (9); or Technology & Civilization HY 121-122-123 (9); or Survey of Western Literature EH 260-261-262 (9)

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*Either BI 102, 103, or 107 may be selected. Also, the Concepts of Science sequence (5 hours) may be substituted for the biology sequence.

#Students not qualifying for MH 161 will take MH 160 for elective credit.

##AY 301 or 401 may be substituted.

###See lists of suggested general and agricultural elective courses. ROTC courses may be substituted for general electives up to a total of 12 credit hours.

NOTE: Students wishing to enroll in Agriculture courses requiring the prerequisite CH 104 or ADS 320 should take CH 103 and 104 as general electives.



# School of Architecture

RAY K. PARKER, *Dean*  
R. Sydney Spain, *Associate Dean*

THE SCHOOL OF ARCHITECTURE consists of three departments, Architecture, Building Science and Industrial Design, with undergraduate programs in Architecture, Interior Design, Landscape Architecture, Building Science and Industrial Design. Graduate degrees are offered in Industrial Design and Community Planning. For details, see the *Graduate School Bulletin*.

Students in the School of Architecture who are enrolled in Advanced ROTC may substitute six hours of Advanced ROTC credits for courses in the curriculum as approved by the student's advisor and department head.

The School of Architecture maintains the right to limit enrollment in all programs.

**Architecture:** The profession of architecture offers the unique opportunity to improve the physical environment through the development and interpretation of functional and visual relationships that form our world and its artifacts. The five-year Bachelor of Architecture degree employs a humanistic approach to education and emphasizes the development of the individual in such manner that the graduate is prepared to provide both a meaningful and significant contribution to society.

**Building Science:** The curriculum in Building Science develops knowledgeable practitioners and managers for a wide variety of roles in the construction industry. Courses are offered in structural and mechanical systems for buildings, construction procedures, cost estimation and construction management. The four-year curriculum leads to the degree of Bachelor of Science in Building Construction, accredited by the American Council for Construction Education.

**Industrial Design:** Industrial Design is concerned primarily with the practical and aesthetic relationship of products and systems to those who use them. The industrial designer is responsible for the product's shape, color, proportion and texture, and for the optimum interaction between man and technology in a system. The professional is deeply concerned with such factors of use as efficiency, convenience, safety, comfort, maintenance and cost. The four-year curriculum leads to the degree of Bachelor of Industrial Design. Graduates will qualify for positions in industrial design consultant offices and in various industries.

**Interior Design:** The curriculum in Interior Design prepares the graduate as a specialist in the design of interior space, and as such, to assume a responsible role among those who shape the physical environment. The four-year curriculum leading to the Bachelor of Interior Design degree encompasses the development of interior space in the context of social, cultural, historical and technical implications which include the selections of furniture, fixtures, equipment, materials and finishes.

**Landscape Architecture:** The Landscape Architecture Program is design-based and benefits from its unique relationship with the Architecture, Community Planning and Interior Design programs within the Department of Architecture. Primary emphasis on the physical design process in the context of the natural and man-made landscape provides the student with a comprehensive appreciation of the role of the design professional within society. The five-year curriculum leads to the professional degree of Bachelor of Landscape Architecture.

## Department of Architecture

**Entering Freshmen** eligibility for admission to Architecture, Interior Design, and Landscape Architecture is determined by the Admissions Office on the basis of the candidate's test scores and previous academic record. These criteria are in addition to those stated in the General Admission Requirements of the university.

**Transfer** Students from non-architectural programs are required to begin the design sequence with AR 101. Transfer students from accredited schools of Architecture will be required to present a portfolio of their work to the Design Coordinating Committee for evaluation. Assuming acceptance, the Committee will determine the level of placement in the design sequence.

**Academic Standards and Policies** - All design studio courses must be taken in sequence and in observance of the prerequisite courses as stated. Any student receiving a grade below C in AR 101, 102, 103 or AR 201, 202, 203, will be reviewed by the Design Review Committee at the end of the year for approval to continue in the design sequence. Similarly, a student with a majority of grades at the C level may be summoned by the Committee for review. All students

completing the second year design sequence will be reviewed for continuance into the third year design sequence.

All design courses above the second year must be completed with a **C** or better evaluation. A student who receives a **D**, may proceed in the design sequence within that year, but can not proceed to the next design year level until the course has been successfully repeated. With an evaluation of **F**, a student must successfully repeat the course in sequence the following academic year before advancing.

In the event two grades below **C** are received in any of the upper level design sequences (AR 301 through 503), a review is required for continuance in the program including the option of being required to repeat the year.

In order to proceed to the beginning sequence of a design studio year level (AR 301, 401 or 501), the student must be within 15 hours of all required courses for that level.

All required first and second year coursework must be successfully completed prior to entry into the third year of design studio. Similarly, all required third and fourth year coursework must be completed prior to entry into the fifth year of design studio and research. Enrollment in 300- and 400-level BSC courses will be limited to those with an overall grade-point average of 2.3 or above and junior standing in design.

During the fourth year, one quarter must be spent in the Urban Studies Center in Birmingham. The equivalent of two summers of professional experience in architectural, engineering, construction or related fields is recommended prior to entry into the fifth-year design level. The Cooperative Education program is available to students in the Architecture program. A one-quarter foreign study program is offered to qualified students.

A Bachelor of Science in Environmental Design is available, for special cases, after completion of the first four years of the curriculum in Architecture and Landscape Architecture at the recommendation of the Design Review Committee, and approval of the dean. If a Bachelor of Science in Environmental Design degree is received, a graduate must apply for readmission to the School in order to be a candidate for the Professional Degree of Bachelor of Architecture or Bachelor of Landscape Architecture.

Completed student work may be retained by the school for indefinite periods for exhibition or for records and accreditation purposes. Return of such work is at the discretion of the department head.

## Department of Building Science

**Entering Freshmen** who meet Auburn University's admissions standards will be accepted into the Pre-Building Science program for Summer or Fall quarters.

**Transfer Students** from other Alabama institutions must have a minimum grade-point average of 2.8 and will be accepted on a space available basis as determined by the department head.

**Academic Standards and Policies** — To be classified as 03 BSC, the student must have completed all coursework shown in the first two years of the model curriculum, have a 2.3 cumulative grade-point average on all courses attempted at Auburn University, and have a minimum of 96 quarter hours. Students in the Department of Architecture will be admitted in 300- and 400-level BSC courses upon completion of second-year design.

## Department of Industrial Design

**Entering Freshmen** who meet the general admission requirements of Auburn University will be admitted to the Pre-Industrial Design Program.

**Transfer Students** from other institutions must meet the university admission requirements. Students transferring from other design disciplines will be required to present examples of their work to determine studio placement. Internal transfer students should contact the department head to determine eligibility.

**Summer Design Program** — Transfer students who have completed courses in the model curriculum for the freshman year may qualify for the Summer Design Program. This program allows students to complete the first year Industrial Design Studio requirements. After completing this program students may enter the sophomore year of study. Contact the department head for more information.

**Academic Standards and Policies** — Design courses must be taken in sequence and may not be taken simultaneously with prerequisites. All courses in the freshman year must be completed before entering the sophomore year of study. A grade of C or higher must be made in studio courses. Grades below C in studio courses 110 through 412 must be repeated. Any student with two grades at the C level or below in IND 110, 111, 112 or 210, 211, 212 may be summoned by the Design Review Committee for review for approval to continue in the design sequence. Admission to the Industrial Design curriculum in the sophomore and junior years requires a 2.5 cumulative grade-point average. The department maintains the right to select the most highly qualified students for admission to and continuation in the program and to retain original work accomplished as part of course instruction.

## Department of Architecture

### Architecture

The profession of architecture is a unique endeavor, combining both rational and intellectual thinking with the intuitive, creative abilities of the artist. As such, the architect must successfully face the difficult challenge of creating the physical environment for future generations while exhibiting abilities to understand and appreciate technical knowledge, social insight, creative discipline and personal integrity.

The Bachelor of Architecture degree is awarded upon the completion of the fifth year of study. Qualified students may elect to pursue a concurrent Master of Community Planning degree or a Bachelor of Science in Building Construction degree under a special dual degree program.

The School of Architecture is a member of the Association of Collegiate Schools of Architecture and the program is accredited by the National Architectural Accrediting Board. The program prepares the graduate for exciting challenges of the profession and qualifies the person to sit for the National Council of Architectural Registration Boards examination upon completion of the Intern Development Program.

Summer employment in the office of an architect is strongly encouraged along with active participation in the Intern Development Program (IDP) after completion of the third year in the curriculum. IDP is a prerequisite to licensing in the State of Alabama and is mandatory in most states.

### Curriculum in Architecture (AR)

FIRST YEAR			THIRD YEAR		
First Quarter		Second Quarter	Third Quarter		
AR 101 Analysis .....	5	AR 102 Synthesis .....	AR 103 Architectonics .....	5	
MH 181 An. Geom. & Cal. ....	5	EH 110 Eng. Comp. ....	AR 221 Comp. in AR****	3	
HY 101 World History .....	3	HY 102 World History .....	HY 103 World History .....	3	
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	U 103 Indiv. & Soc. ....	3	
Elective** .....	1	Elective** .....	Elective** .....	1	
SECOND YEAR			FOURTH YEAR		
AR 201 Arch. Des. ....	5	AR 202 Arch. Des. ....	AR 203 Arch. Des. ....	5	
PS 205 Physics .....	3	PS 206 Physics .....	BSC 211 Mech. of Struct. ....	5	
PS 205L Physics Lab .....	1	PS 206L Physics Lab .....	AR 263 Hist. & Theory Arch. ....	3	
AR 261 Hist. & Theo. Arch. ....	3	AR 262 Hist. & Theo. Arch. ....	PS 207 Physics .....	3	
AR 230 Mtl. & Mth. of Const. ....	3	AR 231 Sys. & Const. Tech. ....	PS 207L Physics Lab .....	1	
Elective** .....	1	Elective** .....	Elective** .....	1	
THIRD YEAR			FIFTH YEAR		
AR 301 Arch. Des. ....	6	AR 302 Arch. Des. ....	AR 501 Arch. Design .....	8	
BSC 311 Str. of Mtl. ....	5	BSC 315 Appl. Struct. ....	EH 401 Prin. Des. Lang. ....	5	
AR 350 20th Cen. Arch. ....	3	AR 330 Env. Control I .....	AR WR Seminar .....	3	
EH 220 Great Books I .....	5	AR 374 His. & Theo. Urb. Form ....	AR 571 Prof. Practice*****	3	
FOURTH YEAR			FIFTH YEAR		
AR 401 Arch. Design .....	6	AR 402 Arch. Design .....	AR 502 Arch. Design .....	6	
Core/Fine Arts** .....	3	EH 401 Prin. Des. Lang. ....	AR 598 WR Thes. Res. ....	4	
AR 435 Dessain .....	3	AR WR Seminar .....	AR Seminar .....	3	
AR 430 Fld. Proj. Elec. ....	3	AR 571 Prof. Practice*****	Prof. Grp. Elect. ....	3	
FIFTH YEAR			FIFTH YEAR		
AR 501 Arch. Design .....	8	AR 502 Arch. Design .....	AR 503 Arch. Design .....	8	
AR 597 Intro. Research .....	1	AR 598 WR Thes. Res. ....	AR 599 Thesis Res. ....	1	
AR 572 Prof. Practice .....	3	AR Seminar .....	Elective .....	3	
Prof. Grp. Elect. ....	3	Prof. Grp. Elect. ....	.....		
AR 435 Dessain .....	3	.....	.....		

## School of Architecture

Summer Option*			Birmingham Program			European Studies Program		
AR	101 Anal. & Comp.	5	AR	Arch. Des.	6	AR	Arch. Des.	6
AR	102 Synth. & Rep.	5	AR	575 U.D. Mth. & Prct.*	3	AR	435 Dessain	3
AR	103 Architectonics	5	AR	571 Prof. Pract.*	3	AR	Seminar	3
				Elective	5		Elective	3
BACHELOR OF ARCHITECTURE								
TOTAL — 247 QUARTER HOURS								

\*Pr. AR 100 Car. in Envir. Des. (3).

\*\*Electives can be used for ROTC or combined into one 3-hour seminar and one 3-hour elective.

\*\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*\*COI or Pr. CSE 100 or equivalent.

\*\*\*\*\*Students are encouraged to work at an architect's office, a construction site or other approved professional endeavor prior to their fourth year.

\*\*\*\*\*Professional Group Elective, such as Bus. Law, CAD, Programming, Lighting, Management, Estimating, Economics, Community Planning, etc.

\*\*\*\*\*To be taken in Birmingham.

One seminar will be chosen from each of four of the following categories:

- AR 551 Seminars in Methods and Process
- AR 552 Seminars in Contemporary Issues
- AR 553 Seminars in Interdisciplinary Studies
- AR 556 Seminars in Historical Perspectives
- AR 557 Seminars in Aspects of Design
- AR 558 Seminars in Disciplines of Environmental Design

## Interior Design

The specific aim of the Interior Design Program is to develop graduates who are capable of formulating creative and appropriate design solutions for the complex needs of today's society with regard to the spatial organization for human activity. The curriculum is designed to develop individuals who are prepared to make thoughtful, creative design decisions which are based on theory and function. The Bachelor of Interior Design degree prepares the graduate to assume a responsible role in the area of interior space design as well as the understanding of collaborative efforts of problem solving to meet the complex needs of society.

The Interior Design Program is accredited by the Foundation for Interior Design Education and Research (FIDER) and has an active student chapter of the American Society of Interior Designers (ASID).

Summer employment with a professional interior designer to gain experience is recommended between the third and fourth year of design.

## Curriculum in Interior Design (ID)

First Quarter			Second Quarter			Third Quarter		
AR	101 Analysis	5	AR	102 Synthesis	5	AR	103 Architectonics	5
MH	161 An. Geom. & Cal.	5	EH	110 Eng. Comp.	5	SM	101 Con. of Sci.	5
HY	121 World History	3	HY	122 World History	3	HY	123 World History	3
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. & Soc.	3
	Elective**	1		Elective**	1		Elective**	1
Second Year			Third Year			Fourth Year		
AR	201 Arch. Design	5	AR	202 Arch. Design	5	AR	203 Arch. Design	5
ID	215 Elements of I.D.	3	ID	216 Elements of I.D.	3	ID	217 Elements of I.D.	3
AR	261 Hist. & Theo. Arch.	3	AR	262 Hist. & Theo. Arch.	3	AR	263 Hist. & Theo. Arch.	3
AR	230 Mtl. & Mth. of Const.	3	EH	220 Great Books I	5	EH	221 Great Books II	5
	Elective**	3						
ID	305 Interior Design	6	ID	306 Interior Design	6	ID	307 Interior Design	6
ID	365 His. & Theo. of ID	3	ID	366 His. & Theo. of ID	3	ID	367 WR 20th Cen. ID	3
AR	35020th Cen. Arch.	3	AR	221 Comp. in Arch.	3		Core/Fine Arts****	3
	Science Elective ****	5	EH	401 Prin. Des. Lang.	5	PA	101 Philosophy	5
ID	405 Interior Design	6	ID	406 Interior Design	6	ID	407 Int. Design Thesis	7
ID	441 Prof. Prac.	3	ID	442 Prof. Prac.	3	ID	443 Prof. Prac.	3
	Prof. Grp. Elect.*****	3	ID	406 WR Int. Des. Res.	2	AR	Seminar	3
AR	435 Dessain	3	AR	Seminar	3		Elective*****	3

# School of Architecture

## SUMMER OPTION\*

AR	101 Anal. & Comp.	5
AR	102 Synth. & Rep.	5
AR	103 Architectonics	5

## EUROPEAN STUDIES PROGRAM

ID	305 Int. Des.	6
AR	435 Dessain	3
	Elective	3
	Elective	3

## BIRMINGHAM PROGRAM

ID	Int. Des.	6
AR	435 Dessain	3
	Elective	3
	Elective	3

## BACHELOR OF INTERIOR DESIGN

TOTAL — 196 QUARTER HOURS

\*Pr. AR 100 Car. in Envir. Des. (3).

\*\*Electives can be used for ROTC or combined into one 3-hour seminar and one 3-hour elective.

\*\*\*COI or Pr. CSE 100 or equivalent.

\*\*\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*\*\*Students are encouraged to work at a professional interior designer's office, architect's office or other approved professional endeavor prior to their fourth year and to receive elective credit.

\*\*\*\*\*Professional Group Elective, such as Bus. Law, CAD, Management, Speech, Accounting, Community Planning

## Landscape Architecture

Landscape Architecture is the planning and design of land and water for optimum human habitation and fulfillment. In its development, the profession of landscape architecture has evolved to include a wide range and scale of activities from the design of intimate gardens to the development of regional environmental analysis and natural resource planning. Sound preparation for a career in landscape architecture requires a thorough professional education, drawing from nature, man, art and technology for its strength. The curriculum addresses itself to the landscape architect's role in understanding and balancing the relationship between human enterprise and the natural environment.

The course of study in landscape architecture acknowledges the regional culture of its locale and student body while seeking to present an attitude toward design which is informed and world-based. The primary mission of the program is: to build upon the cultural value base of the region; expand the student's scope of perception, experience and technique; and develop an intellectual attitude of inquiry, tolerance and professionalism. Students are encouraged to develop the capability to bring order and balance to the environment in a way that reflects the highest values and aspirations of the human condition, unrestrained by popular convention. This capability is accomplished through knowledge, understanding, clarity of thought and skill.

The Bachelor of Landscape Architecture (the professional accredited degree) is awarded upon the successful completion of the fifth year of study. Qualified students may also elect to pursue concurrently the Master of Community Planning degree under a special dual degree program during the fifth year of study. The total curriculum prepares the student for professional practice, as well as for the registration examination in landscape architecture.

## Curriculum in Landscape Architecture (LA)

### FIRST YEAR

#### First Quarter

AR	101 Analysis	5
EH	110 Eng. Comp.	5
MH	160 Pre Cal. w/Trig	5
	Elective *	1

#### Second Quarter

AR	102 Synthesis	5
HY	101 World History	3
BI	105 Pers. in Biology	5
	Elective *	1

#### Third Quarter

AR	103 Architectonics	5
HY	102 World History	3
BI	107 Env. Biology	5
	Elective *	1

### SECOND YEAR

AR	201 Arch. Design	5
LA	261 Hist. of LA I	3
HF	222 Trees	5
HY	103 World History	3
	Elective *	1

AR	202 Arch. Design	5
LA	262 Hist. of LA II	3
HF	223 Everg. Sh. & Vines	5
EH	220 Great Books I	5
	Elective *	1

AR	203 Arch. Design	5
LA	263 Hist. of LA III	3
HF	321 Decid. Sh. & Vines	5
EH	221 Great Books II	5
	Elective *	1

### THIRD YEAR

LA	301 Basic L.A. Design	5
LA	341 LA Const. I	5
AR	350 20th Cen. Arch. ***	3
BSC	324 Const. Surv.	3

LA	302 Basic L.A. Design	5
LA	342 LA Const. II	5
EH	404 Tech. Writ.	5

LA	303 Basic L.A. Design	5
LA	343 LA Const. III	5
LA	363 Comp. in LA	3
	Core/Fine Arts **	3

### FOURTH YEAR

LA	401 Int. LA Design	5
U	101 Soc. & Cult.	3
PA	102 Ethics	5
	Coord. Elec. ****	3

LA	402 Int. LA Design	5
U	102 Polit. Econ.	3
LA	471 LA Pro. Prac. I	3
LA	431 Plant. Des.	5

LA	403 Int. LA Design	5
U	103 Indiv. in Soc.	3
LA	455 Seminar in LA	3
LA	485 Cult. Res. Mgt.	3
	Coord. Elec. ****	3

### SUMMER FOURTH YEAR \*\*\*\*\*

LA	572 Prof. Practice II	1
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## School of Architecture

### FIFTH YEAR

LA 501 Adv. LA Des. .... 5	LA 593 LA Thesis St. I ..... 6	LA 594 LA Thesis St. II ..... 6
LA 591 WR Thes. Res. I ..... 3	LA 592 WR Thes. Res. II ..... 3	Coord. Elec. **** ..... 3
LA 573 Pro. Prac. III ..... 3	Coord. Elec. **** ..... 3	Coord. Elec. **** ..... 3
Coord. Elec. **** ..... 3	Coord. Elec. **** ..... 3	Coord. Elec. **** ..... 3
<b>SUMMER OPTION* #</b>		
AR 101 Anal. & Comp. .... 5	LA 400 LA Design ..... 6	LA LA Design ..... 6
AR 102 Synth. & Rep. .... 5	AR 575 U.D. Mth. & Proc. .... 3	AR 435 Design ..... 3
AR 103 Architectonics ..... 5	LA 471 Pro. Prac. .... 3	LA Seminar ..... 3
	Elective ..... 5	Elective ..... 3

### BACHELOR OF LANDSCAPE ARCHITECTURE

#### TOTAL — 240 QUARTER HOURS

\* Six hours of elective credit in the first two years may be met as ROTC requirements or may be combined as open electives. See Program Chair for recommendations.

\*\* For University Core options to satisfy this requirement, see page 39.

\*\*\* Pr. CSE 100 or equivalent. Prior to enrollment in third year, students must have had AR 121/CSE 100 or equivalent.

\*\*\*\* Selection of 24 credit hours of coordinated electives will be developed with the Program Chair upon admission into the Landscape Architecture Program in the third year.

\*\*\*\*\* Students are encouraged to work as a summer intern in a landscape architect's office or other approved internships during the summer of the fourth year.

# Pr. AR 100 Car. in Environ. Design (3).

## Department Of Building Science

The Building Science graduate's activity encompasses many functions relating to construction of buildings - estimating, scheduling, supervising and managing projects. Students in Building Science learn the basic principles of science, architecture, engineering, business and construction.

The four-year curriculum leads to the degree of Bachelor of Science in Building Construction. Graduates qualify for positions in all phases of the construction industry.

The Cooperative Education Program is offered.

Non-majors will be accepted in BSC classes on a space available basis.

### Curriculum in Building Science (BSC)

#### FIRST YEAR

First Quarter			Second Quarter			Third Quarter		
MH	161 An. Geom. & Cal.	5	MH	162 An. Geom. & Cal.**	5	PS	205 Physics	3
BSC	160 Hist. of Bldg. I	4	EH	110 Eng. Comp.	5	PS	205L Physics Lab	1
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	PA	101 Intro. to Logic	5
HY	121 Tech. & Civil.*	3	HY	122 Tech. & Civil.*	3	U	103 Indiv. & Soc.	3
	Elective	1		Elective	1	HY	123Tech. & Civil.*	3
							Elective	

#### SECOND YEAR

BSC 202 Matls. of Constr. .... 5	BSC 203 Wkg. Dwg. & Spec. .... 4	BSC 211 Mech. of Struct. .... 5
EH 220 Great Books I ..... 5	AC 211 Intr. Acct. .... 4	AC 212 Intr. Acct. .... 4
PS 206 Physics ..... 3	EH 221 Great Books II ..... 5	BSC 204 Const. Syst. .... 3
PS 206L Physics Lab ..... 1	PS 207 Physics ..... 3	SC 100 Prof. Comm.*** ..... 3
BSC 200 Draw. & Proj. .... 3	PS 207L Physics Lab ..... 1	Elective ..... 3

#### THIRD YEAR

BSC 311 Str. of Matls. .... 5	BSC 314 Reinf. Concrete ..... 5	BSC 315 App. Struct. .... 5
EC 301 Econ. Prin. .... 5	MN 310 Prin. of Mgt. .... 5	BSC 372 Comp. in Const. .... 3
BSC 324 Constr. Surveying ..... 3	BSC 352 HVAC Syst. .... 3	BSC 354 Plbg. & Elec. Syst. .... 3
CSE 100 Intro. to PC ..... 3	EH 408 Bus. & Prof. Writ. .... 5	BSC 340 Const. Saf. & Eq. .... 3
		Elective ..... 3

#### FOURTH YEAR

BSC 421 Const. Est. I ..... 5	BSC 531 Const. Est. II ..... 5	BSC 490 B.C. Thesis (WR) ..... 8
BSC 405 Contr. Bus. I ..... 3	BSC 534 Const. Sched. .... 5	MT 255 Leg. Env. .... 4
BSC 581 WR Proj. Mgt. .... 3	BSC 406 Contr. Bus. II ..... 3	
BSC 323 Soils & Found. .... 3	BSC 325 Temp. Struct. .... 3	
Core/Fine Arts ***** ..... 3		

### BACHELOR OF SCIENCE IN BUILDING CONSTRUCTION

#### TOTAL — 197 QUARTER HOURS

\*HY 101, 102, 103 may be substituted for HY 121, 122, 123 (must stay with one sequence).

\*\*Five hours chemistry or MH 169 may be substituted for MH 162.

\*\*\*Three hours of advanced ROTC may be substituted for SC 100; three hours of advanced ROTC may be substituted for three-hour elective.

\*\*\*\*MN 443 may be substituted for MN 310; EC 200 may be substituted for EC 301; also, MT 241 may be substituted for MT 255.

\*\*\*\*\*For University Core options to satisfy this requirement, see page 39.

Six hours of BSC 399 may be used as free electives for co-op students; three hours for all others.

To be classified as 03 BSC and be able to take 300, 400 and 500 BSC courses, the student must have completed all coursework shown in the first two years of the model curriculum, have a 2.3 grade-point average on all courses attempted at Auburn University, and have completed a minimum of 96 quarter hours.

## Department of Industrial Design

The Industrial Designer's activity encompasses areas such as product design, transportation design, package design, exhibition design and systems design.

Students of Industrial Design learn the basic principles of design, engineering, human factors designing, marketing and sociology. They acquire such technical skills as drafting, model-making, photography and sketching techniques. Students are introduced to design methods, product planning, visual statistics, materials, manufacturing methods, consumer psychology and environmental studies.

The four-year curriculum leads to the professional degree of Bachelor of Industrial Design. Graduates will qualify for positions in industrial design consultant offices and in various industries. Highly motivated students will be considered for admission to the Graduate Program in Industrial Design.

The Cooperative Education Program is offered.

### Curriculum in Industrial Design (IND)

FIRST YEAR		
First Quarter		
IND 110	Drw. Syst. ....	5
MH 161	An. Geom. & Cal. ....	5
HY 121	Tech. & Civil. ....	3
U 101	Soc. & Cult. ....	3
	Elective * .....	1
Second Quarter		
IND 111	Persp. Dwg. ....	5
EH 110	Eng. Comp. ....	5
HY 122	Tech. & Civil. ....	3
U 102	Polit. Econ. ....	3
	Elective * .....	1
Third Quarter		
IND 112	Drw. Des. Prod. ....	5
SM 101	Con. of Sci. ....	5
HY 123	Tech. & Civil. ....	3
IND 200	Res. Protolab. ....	1
U 103	Indiv. in Soc. ....	3
	Elective * .....	1
SECOND YEAR		
IND 210	Prin. IND I .....	5
PA 102	Ethics .....	5
COM 100	Prof. Comm. ....	3
	Elective * .....	3
IND 211	Prin. IND II .....	5
IND 221	Mths. & Tech. ....	5
EH 220	Great Books I .....	5
THIRD YEAR		
IND 310	IND/Con. Dev. ....	6
IND 307	Anthropometry ....	5
PS 200	Fnd. Physics ....	5
IND 311	IND/Pack. ....	6
IND 308	Design Wkshop. ....	5
EH 404	Tech. Writ. ....	5
FOURTH YEAR		
IND 410	IND/Systems ....	6
IND 415	Hist. of IND .....	5
EC 202	Economics ....	5
IND 411	IND/Adv. Prod. ....	6
IND 420	WR Pro. Prac. ....	5
MT 331	Prin. of Mkt. ....	5
SUMMER OPTION		
IND 111	Persp. Dwg. ....	5
IND 112	Dwg. Des. Prod. ....	5
BACHELOR OF INDUSTRIAL DESIGN		
	TOTAL — 195 QUARTER HOURS	

Electives can be used for ROTC or combined for 3, 4 or 5 hour electives.



# College of Business

DANNY N. BELLENGER, *Dean*

THE COLLEGE OF BUSINESS prepares students to become effective and socially responsible managers of business and industrial organizations and government agencies and responsible citizens and leaders of society.

To achieve this goal, the College offers undergraduate programs leading to the Bachelor of Science in Business Administration. In addition, it offers graduate work for the degrees of Master of Business Administration (MBA), Master of Science (MS) in both Economics and Business, Master of Accountancy (MAc), and the Doctor of Philosophy in Economics, and Management. For the degree of Master of Science in Business (MS), students are currently being enrolled in the Management Department concentration options of Human Resources Management, Management Information Systems and Production/Operations Management. The College of Business is accredited at the undergraduate and graduate levels by the American Assembly of Collegiate Schools of Business. More detailed information on the graduate programs may be found in the *Graduate School Bulletin*.

## Curriculum

The undergraduate curriculum includes a two-year Pre-Business Program required of all students and a two-year Professional Option Program. These programs provide a balanced course of study for all students, with approximately one-half of the hours in business and economics courses and one-half in courses offered outside the College. The courses required have been selected so that all students will have access to the "common body of knowledge" as designated by the American Assembly of Collegiate Schools of Business.

**The Pre-Business Program**, a plan followed by all business students in their freshman and sophomore years, provides a sound foundation of work in the arts and sciences, including courses in mathematics, humanities, social sciences and natural sciences. This lower division program also includes some of the introductory business courses.

**The Professional Option Programs** are offered through the School of Accountancy and the Departments of Finance; Economics; Management; and of Marketing and Transportation and Physical Distribution. The Professional Option plans allow each student to concentrate in an area of interest during the junior and senior years. The 10 options available include: Accountancy (AC), Finance (FI), International Business (IB), Economics (EC), Management (MN), Operations Management (OM), Human Resources Management (HRMN), Management Information Systems (MIS), Marketing (MK) and Transportation and Physical Distribution (TN). Through these programs, the College seeks to develop in its students the analytical, decision-making and communication skills required of managers who lead modern organizations.

**Business Minor**—A Business Minor has been established within the College of Business for non-business majors. The courses required correspond with the common body of knowledge as specified by the American Assembly of Collegiate Schools of Business. Completion of these courses provides a student with the basic understanding of the foundations of business administration and facilitates progress toward graduate work in business. The courses required for a business minor are: EC 301 (EC 200 and 202 may be substituted), MN 310, AC 215 (AC 211 and 212 may be substituted), MT 331 and FI 361.

## Admission to the College

Students entering the Pre-Business Program directly from high school or another college or university, in addition to meeting Auburn University's admission requirements, should have competence in the mathematics taught in high school geometry and second year algebra. Students also may transfer into the program from another school on campus if they have attained an overall grade-point average of at least 2.0 on all courses attempted at Auburn University.

## Admission to Business Courses

A 2.0 grade-point average is required for enrollment in any Business course at the 300-level and above. This rule applies to both Business and non-Business students.

## Graduation Requirements

To be graduated, business students must meet the hours and subject matter requirements of their curricula and must have an overall average of at least 2.0 on all courses attempted at Auburn University.

## Student Advising System

The Office of Student Affairs of the College of Business is responsible for orienting all new students, freshmen and transferees to the College. All students report each quarter to Student Affairs, Thach 215, to plan their academic schedules and to obtain information.

Faculty members are available to all students for academic counseling and career guidance. Students are encouraged to seek advice on professional and academic questions from department heads and faculty through personal arrangements or appointments made by Student Affairs.

Student Affairs is also available to assist students from another College or School on campus to pursue a second baccalaureate degree in the College of Business.

## Cooperative Education Program

Business students are eligible to participate in the university's Cooperative Education Program. This program allows students to combine academic training with actual business experience.

## Pre-Business Program

The requirements of the Pre-Business Program are given in the model below. Students who enter from high school register in this program until they complete all Pre-Business requirements. Students who enter by transfer and who have not yet completed all Pre-Business requirements, must register in the Pre-Business Program.

Before being admitted into a Professional Option Program, business students must complete all courses in the Pre-Business Program with a satisfactory academic record.

Specific professional options may differ in some details from the model presented here. Students should consult an advisor before selecting any classes.

### Pre-Business Program

FRESHMAN YEAR									
First Quarter					Third Quarter				
MH	140 Col Algebra	or	MH	161 An. Geom. & Cal.	5	MH	169 Bus. Mh. w/Cal. App.	5	
MH	160 Pre-Cal w/Trig.	5		Core/Science I **	5		Core/Science II **	5	
EH	110 Eng. Comp.	5		Core/History II **	3		Core/History III **	3	
	Core/History I **	3	U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	
CSE	100 Intr. PC	3							
SOPHOMORE YEAR									
U	103 Indiv. & Soc.	3	COM	100 Prof. Comm.	3	PA	102 Intr. Ethics	5	
EH	220 Great Books I	5	EH	221 Great Books II	5	MT	241 Bus. Law	5	
EC	200 Economics I	5	EC	202 Economics II	5		Elective	5	
AC	211 Prin. Acct. I	4	AC	212 Prin. Acct. II	4				

\*Credit is not allowed for both MH 140 and 160.

\*\*For University Core options to satisfy these requirements, see page 39.

## School of Accountancy

### Accountancy

A sound knowledge of the fundamentals of accountancy is essential to success in any economic endeavor. Accountancy is the language of business and accounting procedures and records are the basic ingredients for sound management decision-making in both business and non-business organizations, including public and philanthropic bodies. Financial reports are required by the Securities and Exchange Commission with the sale of stocks and bonds which form the capital structure of our economic society. They are the basis for determining income taxes due federal and state governments.

The Professional Option Program in Accountancy develops the student's ability to work effectively, to exercise mental discipline and to communicate orally and in writing. The student gains an appreciation of the accountant's high standard of integrity and objectivity in reporting and an awareness of the responsibility for self-education upon entering a career in accountancy.

The Professional Option Program in Accountancy is intended to attract to accountancy careers those students who seem to possess the potential for making a contribution to the advancement



of accountancy and who have the aptitude which indicates a reasonable chance for a successful career.

Students who plan to sit for the CPA Exam should consider a fifth year of study through the Master of Accountancy (MAC) Program. Beginning in 1995, those sitting for the CPA Exam in the State of Alabama must have completed a fifth year of accounting education. Information regarding the MAC Program can be found in the *Graduate School Bulletin*.

### Curriculum in Accountancy (AC)

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH	140 Coll. Algebra ..... 0f	MH	161 An. Geom. & Cal. .... 5	MH	169 Bus. Math w/Cal. .... 5
MH	160 Pre-Cal. w/Trig. .... 5		Core/Science I ** ..... 5		Core/Science II ** ..... 5
EH	110 Eng. Comp. .... 5		Core/History II ** ..... 3		Core/History III ** ..... 3
	Core/History I ** ..... 3	U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3
CSE	100 Intro PC ..... 3				

#### SOPHOMORE YEAR

U	103 Indiv. & Soc. .... 3	COM	100 Prof. Comm. .... 3	PA	102 Intro. Ethics ..... 5
EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	MT	241 Bus. Law ..... 5
EC	200 Economics I ..... 5	EC	202 Economics II ..... 5		Elective ..... 5
AC	211 Prin. Acct. I ..... 4	AC	212 Prin. Acct. II ..... 4		

#### JUNIOR YEAR

AC	311 Inter. Acct. I ..... 5	EH	408 B&P Writing ..... 5		Core/Fine Arts ** ..... 3
MN	310 Prin. of Mgt. .... 5	MN	314 Intro. to MIS ..... 2	AC	313 Inter Acct. III ..... 5
MN	301 Statistics I ..... 5	AC	312 Inter Acct. II ..... 5	AC	319 Bus. Law Acct. .... 5
	Elective ..... 1	FI	361 Prin. of Finance ..... 5		Elective ..... 3

#### SENIOR YEAR

MT	331 Prin. of Mkt. .... 5		Elective * ..... 5	AC	417 Cost Acct. .... 5
AC	415 Acct. Sys. .... 5		Elective ..... 5		Elective ..... 3
AC	314 Income Tax ..... 5	AC	416 Auditing ..... 5	MN	480 Bus. Policies ..... 5
					Elective ..... 3

#### TOTAL — 192 QUARTER HOURS

\*Non fifth-year students may take one elective from AC 601, 612 or 614 if they meet Graduate School requirements for an undergraduate to enroll in a graduate course.

\*\*For University Core options to satisfy this requirement, see page 39.

#### NOTE:

1) A student who does not meet the admission requirements for the graduate program must complete the 192-hour requirement of the undergraduate program to receive a B.S. degree in business administration with a professional option in accounting.

2) Students planning to enroll in the Masters of Accountancy-Taxation Concentration are strongly encouraged to take AC 614 as it is a prerequisite to AC 630.

## Department of Finance

### Finance

The influence and the responsibilities of financial executives have been expanding dramatically in recent years. Financial officers are involved in the most profound decisions affecting the strategy of business operations. They decide to expand, merge, contract and change. They are concerned not only with the pricing of products, but with the initial decision to produce them. All aspects of business affairs ultimately reduce to dollar terms, and the financial officers' intimate knowledge of the intricacies of financial operations place them in a vital role in corporate management.

The Professional Option Program in Finance offers students an opportunity to specialize in sub areas of finance. Courses in real estate are available.

### Curriculum in Finance (FI)

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH	140 Coll. Algebra ..... 0f	MH	161 An. Geom. & Cal. .... 5	MH	169 Bus. Math w/Cal. .... 5
MH	160 Pre-Cal. w/Trig. .... 5		Core/Science I ** ..... 5		Core/Science II ** ..... 5
EH	110 Eng. Comp. .... 5		Core/History II ** ..... 3		Core/History III ** ..... 3
	Core/History I ** ..... 3	U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3
CSE	100 Intro PC ..... 3				

#### SOPHOMORE YEAR

U	103 Indiv. & Soc. .... 3	COM	100 Prof. Comm. .... 3	PA	102 Intro. Ethics ..... 5
EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	MT	241 Bus. Law ..... 5
EC	200 Economics I ..... 5	EC	202 Economics II ..... 5		Elective ..... 5
AC	211 Intr. Acct. I ..... 4	AC	212 Intr. Acct. II ..... 4		

## JUNIOR YEAR

MN	301 Statistics .....	5	AC	311 Inter. Acct. I .....	5	AC	312 Inter. Acct. II .....	5
AC	213 Mgr. Cost .....	4	FI	367 Fin. Inst. ....	5	FI	464 Investments .....	5
FI	361 Prin. of Fin. ....	5	MN	310 Prin. of Mgt. ....	5	FI	363 Adv. Fin. ....	5
MN	314 Intro. to MIS .....	2					Core/Fine Arts ** .....	3

## SENIOR YEAR

MT	331 Prin. Mkt. ....	5	EH	408 B&P Writ. ....	5	MN	480 Bus. Policies .....	5
	Elective .....	4		Elective .....	5		Elective .....	4
	Fin. Elective * .....	5		Fin. Elective * .....	5		Des. Elective *** .....	5
				Elective .....	3			

## TOTAL — 192 QUARTER HOURS

\* FINANCE ELECTIVES: FI 423 Real Estate Fin. (5), 463 Fin. Mgt.-Cases (5), 466 Sec Anal. & Port. Mgt. (5), 469 Mgt. of Fin. Inst. (5), 471 Utility Finance (5).

\*\* For University Core options to satisfy this requirement, see page 39.

\*\*\* DESIGNATED ELECTIVE: A designated elective may be chosen from among any of the 300-, 400-, 500-level AC or FI courses, exclusive of AC or FI 400 or 490.

## International Business

The demand for managers trained in both foreign language and business principles is growing at an accelerated pace. The International Business Option provides the student with the opportunity to develop analytical and decision making skills necessary for effective participation in the global challenge facing American business today. The curriculum is designed to emphasize the additional risks encountered by international business firms and to enable the student to acquire proficiency in a foreign language including specialized business terminology. (See also Foreign Languages — International Trade Major in the College of Liberal Arts.)

## Curriculum in International Business (IB)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH	140 Coll. Algebra .....	or	MH	161 An. Geom. & Cal. ....	5	MH	169 Bus. Math w/Cal. ....	5
MH	160 Pre-Cal. w/Trig. ....	5	CSE	100 Intro PC .....	3	U	102 Polit. Econ. ....	3
EH	110 Eng. Comp. ....	5		Core/History I *** .....	3		Core/History II ** .....	3
	For. Lang. * .....	5	U	101 Soc. & Cult. ....	3		For. Lang. * .....	5
				For. Lang. * .....	5			

## SOPHOMORE YEAR

	Core/History III ** .....	3	EH	220 Great Books I .....	5	EH	221 Great Books II .....	5
U	103 Indiv. in Soc. ....	3	EC	200 Econ. I .....	5	EC	202 Econ. II .....	5
AC	211 Prin. Acct. I .....	4	AC	212 Prin. Acct. II .....	4		For. Lang. * .....	5-4
	For. Lang. * .....	5-4		For. Lang. * .....	5-4			

## JUNIOR YEAR

MT	331 Prin. Mkt. ....	5		Science I **** .....	5		Core/Science II ** .....	5
FI	361 Prin. of Fin. ....	5	MN	310 Prin. of Mgt. ....	5	MN	314 Intro. to MIS .....	2
MN	301 Statistics I .....	5	EH	408 B&P Writ. ....	5		Bus. Concen. *** .....	5
	For. Lang. Conv. * .....	3		For. Lang. Comp. * .....	3	FI	451 Multinat'l Fin. ....	5

## SENIOR YEAR

EC	571 Int'l. Econ. ....	5		Elective .....	3-5	MN	480 Bus. Policies .....	5
	Bus. Elective *** .....	5		Bus. Concen. *** .....	5		Bus. Concen. *** .....	5
	For. Bus. Lang. * .....	3	MT	241 Bus. Law .....	5		Bus. Elect. *** .....	3
PA	102 Intro. to Ethics .....	5		Core/Fine Arts ** .....	3		Elective .....	3-4

## TOTAL — 202 QUARTER HOURS

\* Language sequence to be taken exclusively in French, Spanish or German.

FRENCH: FR 101, 102, 103, 201, 202, 203, 301, 302, 321

GERMAN: GR 101, 102, 103, 201, 202, 203, 304, 306, 401

SPANISH: SP 101, 102, 103, 201, 202, 203, 303, 304, 320

\*\* For University Core options to satisfy this requirement, see page 39.

\*\*\* Business electives must be chosen from College of Business courses of the 300-level or above.

\*\*\*\* A Business Concentration must be selected from one of the following areas. Economics: EC 551, 556 and any 500-level economics elective. Finance: FI 363, 367 and 464. Human Res. Mgt.: MN 342, 443 and any one of MN 348, 501, 547, 550, 551, 553. Marketing: MT 341, 440 and either 434 or 438. Operations Mgt.: MN 380, 386 and 387. MIS: MN 307, 401 and 583

## Department of Economics

## Business Economics

Economic understanding is the foundation of effective managerial decision-making. The Business Economics Professional Option provides students with the critical awareness and analytical capacity needed to succeed in managerial and administrative positions, whether in the private or public sector. The Business Economics curriculum provides maximum flexibility and broad-based preparation for future employment opportunities. Graduates are prepared for entry-

level positions in many areas of business activity. In addition, the Economics Option provides excellent preparation for graduate or professional studies. (See also Economics Major in the College of Liberal Arts.)

### Curriculum in Business Economics (EC)

FRESHMAN YEAR		
First Quarter		Second Quarter
MH 140 College Algebra ..... or	MH 161 An. Geom. & Cal. .... 5	MH 169 Bus. Mh w/Cal. App. ... 5
MH 160 Pre-Cal. w/Trig. .... 5	Core/Science I ** ..... 5	Core/Science II ** ..... 5
EH 110 English Comp. .... 3	Core/History II ** ..... 3	Core/History III ** ..... 3
Core/History I ** ..... 3	U 101 Soc. & Cult. .... 3	U 102 Polit. Econ. .... 3
CSE 100 Intro. to PC ..... 3		
SOPHOMORE YEAR		
U 103 Indiv. & Soc. .... 3	COM 100 Prof. Com. .... 3	PA 102 Intro. Ethics ..... 5
EH 220 Great Books I ..... 5	EH 221 Great Books II ..... 5	MT 241 Bus. Law ..... 5
EC 200 Economics I ..... 5	EC 202 Economics II ..... 5	Elective ..... 5
AC 211 Intr. Acct. I ..... 4	AC 212 Intr. Acct. II ..... 4	
JUNIOR YEAR		
EC 551 Inter. Mic.-Econ. .... 5	EC 556 Inter. Mac.-Econ. .... 5	MT 331 Prin. of Mkt. .... 5
FI 361 Prin. of Fin. .... 5	MN 301 Statistics I ..... 5	Dept. Elect. * ..... 5
MN 310 Prin. of Mgt. .... 5	Elective ..... 5	MN 314 Intro. MIS ..... 2
		Core/Fine Arts ** ..... 3
SENIOR YEAR		
EH 408 B&P Writ. .... 5	Dept. Elect. * ..... 5	MN 480 Bus. Policies ..... 5
EC 554 Hist. Ec. Thought ..... 5	Elective ..... 5	Dept. Elect. * ..... 5
Dept. Elect. * ..... 5	Elective ..... 5	Elective ..... 5
Elective ..... 3	Elective ..... 2	

#### TOTAL — 192 QUARTER HOURS

\*Department Elective — any EC course other than EC 206 or 301.

\*\*For University Core options to satisfy this requirement, see page 39.

## Department of Management

The success or failure of any business is dependent upon the quality of its management. Business managers must acquire and effectively utilize physical, financial and human resources to ensure an organization's survival and development. In order to make sound decisions, the manager must be knowledgeable in basic business functions as well as the process of management.

The professional options within the Management Department are designed to impart knowledge which will assist future managers to be good decision makers for their organizations.

### Operations Management

The Operations Management Program prepares students for a broad range of managerial and staff positions in business. The functional, behavioral, economic and legal aspects of various types of business organizations are studied, utilizing a variety of analytical and conceptual models, tools and techniques. Electives may be utilized to provide an emphasis in the area of computer information systems, process control and improvement, materials management, service operations management, purchasing or forest products.

### Curriculum in Operations Management (OM)

FRESHMAN YEAR		
First Quarter		Second Quarter
MH 140 College Algebra ..... or	MH 161 An. Geom. & Cal. .... 5	MH 169 Bus. Mh w/Cal. App. ... 5
MH 160 Pre-Cal. w/Trig. .... 5	Core/Science I ** ..... 5	Core/Science II ** ..... 5
EH 110 English Comp. .... 3	Core/History II ** ..... 3	Core/History III ** ..... 3
Core/History I ** ..... 3	U 101 Soc. & Cult. .... 3	U 102 Polit. Econ. .... 3
CSE 100 Intro. to PC ..... 3		
SOPHOMORE YEAR		
U 103 Indiv. & Soc. .... 3	COM 100 Prof. Com. .... 3	PA 102 Intro. Ethics ..... 5
EH 220 Great Books I ..... 5	EH 221 Great Books II ..... 5	MT 241 Bus. Law ..... 5
EC 200 Economics I ..... 5	EC 202 Economics II ..... 5	Elective ..... 5
AC 211 Intr. Acct. I ..... 4	AC 212 Intr. Acct. II ..... 4	
JUNIOR YEAR		
MN 310 Prin. of Mgt. .... 5	MN 380 Prin. Op. Mgt. .... 5	MN 385 Prod. Mgt. .... 5
MT 331 Prin. of Mkt. .... 5	MN 314 Intro. to MIS ..... 2	Core/Fine Arts ** ..... 3
MN 301 Statistics I ..... 5	FI 361 Prin. of Fin. .... 5	C.O.B. Elect. * ..... 5
	EH 408 B&P Rept. .... 5	Non-Bus. Elect. *** ..... 5

## SENIOR YEAR

MN 386 Mat. Mgt. I.....	5	MN 387 Mkt. Mgt. II.....	5	MN 480 Bus. Policies.....	5
MN 474 Quality Assur.....	5	Elective.....	5	MN 484 Oper. Mgt. Pol.....	5
Elective.....	5	Elective.....	5	C.O.B. Elective**.....	5

## TOTAL — 192 QUARTER HOURS

\* College of Business (COB) electives (10 hours): MN 207, 305, 307, 401, 560, 583; MN 342, 346, 374, 381, 400, 410, 414, 415; MN 420, 421, 440, 443, 475; MT 341, 347, 373, 434, 438, 474, 477; AG 213.

\*\* For University Core options to satisfy this requirement, see page 39.

\*\*\* Non-business electives (5 hours): IE 401, 501 or 503, 508, 566; PO 410; HA 360, 370, 420; NF 450, 504; FP 301, 311, 339, 474, 475, 477; TMT 101, 482; AM 314; PA 111, 211.

## Management

The "Management" Professional Option prepares students to assume managerial and staff responsibilities in business, government and non-profit organizations. Emphasis is on broad management training rather than specialization in a particular industry. It is an opportunity-oriented program designed for students who wish to develop career flexibility. This program also provides an opportunity for the students to take a concentration option in Small Business Management.

## Curriculum in Management (MN)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 140 College Algebra.....	or	MH 161 An. Geom. & Cal.....	5	MH 169 Bus. Mh w/Cal. App. ....	5
MH 160 Pre-Cal. w/Trig.....	5	Core/Science I**.....	5	Core/Science II**.....	5
EH 110 English Comp.....	5	Core/History II**.....	3	Core/History III**.....	3
Core/History I**.....	3	U 101 Soc. & Cult.....	3	U 102 Polit. Econ.....	3
CSE 100 Intro. to PC.....	3				

## SOPHOMORE YEAR

U 103 Indiv. & Soc.....	3	COM 100 Prof. Com.....	3	PA 102 Intro. Ethics.....	5
EH 220 Great Books I.....	5	EH 221 Great Books II.....	5	MT 241 Bus. Law.....	5
EC 200 Economics I.....	5	EC 202 Economics II.....	5	Elective.....	5
AC 211 Intr. Acct. I.....	4	AC 212 Intr. Acct. II.....	4		

## JUNIOR YEAR

MN 301 Statistics I.....	5	MT 331 Prin. of Mkt.....	5	MN 342 Hum. Res. Mgt.....	5
AC 213 Mgt. Cost & Bdgt.....	4	MN 346 Org. Behavior.....	5	Bus. Elective.....	5
MN 310 Prin. of Mgt.....	5	FI 361 Prin. of Fin.....	5	EH 408 B&P Rpt.....	5
Core/Fine Arts**.....	3	MN 314 Intro. to MIS.....	2		

## SENIOR YEAR

Fin. Elective.....	5	Mgt. Elective.....	5	MN 480 Bus. Policies.....	5
Int'l Elective.....	5	Elective.....	5	Mkt. Elective.....	5
MN 380 Prin. of Oper. Mgt.....	5	Elective.....	5	Elective.....	3
				Elective.....	3

## TOTAL — 192 QUARTER HOURS

\*\*For University Core options to satisfy this requirement, see page 39.

A concentration in one of two areas may be obtained by taking College of Business electives listed below:

1. General Management Concentration: Management (choose 1) - MN 307, 400, 401, 404, 405, 410, 414, 415, 440, 443, 560, 583; Finance (choose 1) - FI 323, 362, 363, 367, 423, 451, 464; Marketing (choose 1) - MT 242, 255, 332, 333, 341, 347, 372, 373, 440; International (choose 1) - MN 410, MT 440, FI 451, EC 571; Business Elective - choose from any of the above business electives or EC 360, MN 420 or 421.

2. Small Business Concentration (temporarily suspended): Management - MN 414; Finance - FI 362; Marketing (choose 1) - MT 332, 333, 341, 347; International - (same as above); Business Elective - MN 415.

## Human Resources Management

The Human Resources Management Program provides a comprehensive education in human resources management. Primary goals are to provide knowledge oriented toward practical, on-the-job applications and prepare students for entry-level positions in private and public sector organizations. Beyond the strong foundation in human resources, opportunities are provided for students to take courses relating to other areas such as information systems, service industry operations and strategic management.

## Curriculum in Human Resources Management (HRMN)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 140 College Algebra.....	or	MH 161 An. Geom. & Cal.....	5	MH 169 Bus. Mh w/Cal. App. ....	5
MH 160 Pre-Cal. w/Trig.....	5	Core/Science I**.....	5	Core/Science II**.....	5
EH 110 English Comp.....	5	Core/History II**.....	3	Core/History III**.....	3
Core/History I**.....	3	U 101 Soc. & Cult.....	3	U 102 Polit. Econ.....	3
CSE 100 Intro. to PC.....	3				

## SOPHOMORE YEAR

U 103 Indiv. & Soc. ....	3	COM 100 Prof. Com. ....	3	PA 102 Intro. Ethics ....	5
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	MT 241 Bus. Law ....	5
EC 200 Economics I ....	5	EC 202 Economics II ....	5	Elective ....	5
AC 211 Intr. Acct. I ....	4	AC 212 Intr. Acct. II ....	4		

## JUNIOR YEAR

MN 310 Prin. of Mgt. ....	5	MN 443 Labor Relat. ....	5	MN 346 Org. Behavior ....	5
MT 331 Prin. of Mkt. ....	5	EHA 408 B&P Writ. ....	5	FI 361 Prin. of Fin. ....	5
MN 301 Statistics I ....	5	MN 342 Hum. Res. Mgt. ....	5	MN 314 Intro. to MIS ....	2
				Elective ....	5

## SENIOR YEAR

MN 501 Labor Rel. Law ....	5	MN 546 Pers. Adm. Leg. ....	5	MN 480 Bus. Policies ....	5
MN 550 Pers. Sel. & Pl. ....	5	MN 551 Manpower Plan. ....	5	MN 547 Emp. Comp. ....	5
Core/Fine Arts ** ....	3	MN 552 Pers. Org. Res. ....	or	Elective ....	5
Elective ....	5	MN 553 Lab. Neg. & Arb. ....	5		

## TOTAL — 192 QUARTER HOURS

\*\* For University Core options to satisfy this requirement, see page 39.

## Management Information Systems

The MIS Program prepares students for the wide variety of managerial and staff positions in the information systems (IS) field, such as systems analysts, database administrators, telecommunications managers, etc. Given the importance of information to their success, businesses are devoting increasingly large amounts of resources to the information systems that provide necessary information. It is the responsibility of IS professionals and managers to see that these systems are efficiently and effectively planned, designed, operated, maintained and managed. The emphasis of the MIS Program is the management of information technology, to include strategy assessment, strategy development and business and information planning. MIS instruction consists of hands-on computer use, lecture, discussion, field trips, demonstrations, presentations by practitioners, applied team projects in the business community and case studies. Details concerning the MIS Program are available in the department or from College of Business advisors.

## Curriculum in Management Information Systems (MIS)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 140 College Algebra ....	or	MH 161 An. Geom. & Cal. ....	5	MH 169 Bus. Mh w/Cal. App. ...	5
MH 160 Pre-Cal. w/Trig. ....	5	Core/Science I ** ....	5	Core/Science II ** ....	5
EH 110 English Comp. ....	5	Core/History II ** ....	3	Core/History III ** ....	3
Core/History I ** ....	3	U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3
CSE 100 Intro. to PC ....	3				

## SOPHOMORE YEAR

U 103 Indiv. & Soc. ....	3	COM 100 Prof. Com. ....	3	PA 102 Intro. Ethics ....	5
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	MT 241 Bus. Law ....	5
EC 200 Economics I ....	5	EC 202 Economics II ....	5	Elective ....	5
AC 211 Intr. Acct. I ....	4	AC 212 Intr. Acct. II ....	4		

## JUNIOR YEAR

MT 331 Prin. of Marketing ....	5	FI 361 Prin. of Fin. ....	5	MN 305 Adv. Comp. Prog. ....	5
MN 310 Prin. of Mgt. ....	5	MN 307 Bus. Comp. Appl. ....	5	MN 583 Data Base Mgt. ....	5
MN 301 Statistics ....	5	MN 380 Prin. Oper. Mgt. ....	5	EH 408 B&P Writ. ....	5
Core/Fine Arts ** ....	3	MN 314 Intro. to MIS ....	2		

## SENIOR YEAR

MN 405 Info. Res. Mgt. ....	5	MN 580 Surv. Cur. Tech. ....	5	MN 480 Bus. Policies ....	5
MN 401 Anal. & Des. ....	5	MN 404 Telecom. & Netw. ....	5	MN 588 MIS Projects ....	5
Elective ....	5	Elective ....	5	Elective ....	5

## TOTAL — 192 QUARTER HOURS

\*\*For University Core options to satisfy this requirement, see page 39.



## Department of Marketing and Transportation

The fields of Marketing and of Transportation and Physical Distribution are critical in the effective operation of business in the free world. Students gain the foundation to understand the entire corporate philosophy which affects every phase of the business program — from initial product conception to the delivery of satisfaction to the final customer. Marketing majors discover the interrelationship of marketing to other management tools and prepare themselves for executive/managerial careers involving functional areas such as advertising, channel and product decision-making, pricing, retailing and strategic market planning. Transportation and Physical Distribution majors complete a course of study which prepares them for careers in carrier, physical distribution and industrial traffic management and for assignments in urban transportation and development planning, and as traffic and transportation and distribution specialists.

### Curriculum in Marketing (MK)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 140 College Algebra ..... or	MH 161 An. Geom. & Cal. .... 5	MH 169 Bus. Mh w/Cal. App. ... 5
MH 160 Pre-Cal. w/Trig. .... 5	Core/Science I ** ..... 5	Core/Science II ** ..... 5
EH 110 English Comp. .... 5	Core/History II ** ..... 3	Core/History III ** ..... 3
Core/History I ** ..... 3	U 101 Soc. & Cult. .... 3	U 102 Polit. Econ. .... 3
CSE 100 Intro. to PC ..... 3		
SOPHOMORE YEAR		
U 103 Indiv. & Soc. .... 3	COM 100 Prof. Com. .... 3	PA 102 Intro. Ethics ..... 5
EH 220 Great Books I ..... 5	EH 221 Great Books II ..... 5	MT 241 Bus. Law ..... 5
EC 200 Economics I ..... 5	EC 202 Economics II ..... 5	Elective ..... 5
AC 211 Intr. Acct. I ..... 4	AC 212 Intr. Acct. II ..... 4	
JUNIOR YEAR		
EH 408 B&P Writ. .... 5	MN 310 Prin. of Mgt. .... 5	MT 338 Quan. Anal. Mkt. .... 5
MN 301 Statistics I ..... 5	MT 331 Prin. of Mkt. .... 5	MT 341 Buyer Behavior ..... 5
CSE 204 Comp. Prog. .... 3	PA 101 Logic ..... 5	FI 361 Prin. of Fin. .... 5
Core/Fine Arts ** ..... 3		MN 314 Intro. to MIS ..... 2
SENIOR YEAR		
MT 436 Mkt. Res. .... 5	Dept. Elect. * ..... 5	MT 498 Mkt. Strategy ..... 5
Elective ..... 5	Dept. Elect. * ..... 5	MN 480 Bus. Policies ..... 5
Elective ..... 5	Dept. Elect. * ..... 5	Elective ..... 5
Elective ..... 2		

#### TOTAL — 192 QUARTER HOURS

\*Departmental Electives — MT 432, 433, 437, 438, 440, 470, 477, 581, 582, 583, 584

\*\*For University Core options to satisfy this requirement, see page 39.

### Curriculum in Transportation & Physical Distribution (TN)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 140 College Algebra ..... or	MH 161 An. Geom. & Cal. .... 5	MH 169 Bus. Mh w/Cal. App. ... 5
MH 160 Pre-Cal. w/Trig. .... 5	Core/Science I ** ..... 5	Core/Science II ** ..... 5
EH 110 English Comp. .... 5	Core/History II ** ..... 3	Core/History III ** ..... 3
Core/History I ** ..... 3	U 101 Soc. & Cult. .... 3	U 102 Polit. Econ. .... 3
CSE 100 Intro. to PC ..... 3		
SOPHOMORE YEAR		
U 103 Indiv. & Soc. .... 3	COM 100 Prof. Com. .... 3	PA 102 Intro. Ethics ..... 5
EH 220 Great Books I ..... 5	EH 221 Great Books II ..... 5	MT 241 Bus. Law ..... 5
EC 200 Economics I ..... 5	EC 202 Economics II ..... 5	Elective ..... 5
AC 211 Intr. Acct. I ..... 4	AC 212 Intr. Acct. II ..... 4	
JUNIOR YEAR		
AC 213 Mgt. Cost & Bud. .... 4	MT 372 Prin. of Transp. .... 5	MT 373 Intr. Phys. Dist. .... 5
MN 301 Statistics I ..... 5	MN 310 Prin. of Mgt. .... 5	FI 361 Prin. of Fin. .... 5
EH 408 B&P Writ. .... 5	MT 331 Prin. of Mkt. .... 5	MT 474 Ind. Traf. Mgt. .... 5
Elective ..... 3		MN 314 Intro. to MIS ..... 2
SENIOR YEAR		
MT 475 Tran. Reg. & Pol. .... 5	MT 476 Carrier Mgt. .... 5	MN 480 Bus. Policies ..... 5
Core/Fine Arts ** ..... 3	Dir. Elect. *** ..... 5	Dir. Elect. *** ..... 5
Dept. Elective * ..... 5	Elective ..... 5	Elective ..... 5
Elective ..... 3		

#### TOTAL — 192 QUARTER HOURS

\*Departmental Electives for Transportation and Physical Distribution: MT 336, 341, 347, 434, 437, 438, 440, 477, 588.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*Directed Electives. Report to a departmental advisor to select an approved career - goal-oriented business or non-business elective. Bring your approval form to Student Affairs.

# College of Education

RICHARD C. KUNKEL, *Dean*  
VIRGINIA HAYES, *Associate Dean*  
WILLIAM L. DEATON, *Associate Dean*  
ROBERT E. ROWSEY, *Assistant Dean*  
JUDY G. TOMLIN, *Assistant Dean*

THE COLLEGE OF EDUCATION is accredited by the National Council for Accreditation of Teacher Education for the preparation of teachers and school service personnel with the doctor's degree as the highest degree approved. Emphasis in all programs is upon the preparation of personnel who will be able to meet successfully the performance demands of the roles they assume in their professional positions.

## Undergraduate Curricula

Bachelors degree options in the College of Education are the Bachelor of Science in Education and the Bachelor of Music Education.

Teaching and non-teaching programs are offered through the College of Education. Teaching programs are presented first, followed by non-teaching programs.

## Scholastic Requirements

**The Selective Admission and Retention Program in Teacher Education** — In recognition of responsibilities to the schools in which its graduates teach, the College maintains a program of selective admission and retention of candidates for the teaching profession. This program is designed to assure that no candidates are recommended for admission to the Teacher Education Program, the professional internship or certification unless they are deemed competent in their university studies and professional performance.

A grade point average of 2.5 (computed by the State Department of Education formula for admission to teacher education programs) and an ACT score of 16 (18 Enhanced ACT) or SAT score of 745 are required to transfer into a teacher education program. The classification GCE, General College of Education, will be assigned to transfer students until eligibility to enter a professional program is determined and/or attained.

Students must submit a formal written application for admission to Teacher Education after completing at least 90 quarter hours of work, usually at the end of the sophomore year. Criteria for admission are:

- (1) a minimum grade-point average of at least 2.5 (on a four-point scale) computed by State Department of Education formula;
- (2) satisfactory performance on a written and spoken English language competency examination;
- (3) satisfactory performance in an interview examining personality, interests and aptitudes consistent with the requirements for successful teaching;
- (4) a score of at least 16 on the ACT (18 Enhanced ACT), which cannot be more than five years old; or a combined score of at least 745 on the SAT, which cannot be more than five years old; and
- (5) successful performance in the pre-professional field experience.

Students who fail to meet these criteria upon initial application may submit new evidence in an effort to satisfy any and/or all of the above standards.

While retention in the Teacher Education Program is based on the continuous evaluation of students, a formal evaluation takes place as a prerequisite for admission to the professional internship. Requirements for admission to the professional internship are:

- (1) admission to the Teacher Education Program;
- (2) completion of appropriate courses in the area of specialization;
- (3) a grade-point average of 2.5 or above computed by State Department of Education formula in each of the following: professional teacher education, the teaching major(s), overall; and
- (4) demonstrated potential for teaching.

In addition, in order to be eligible for graduation with teacher certification, the students will be expected to complete the requirements identified above, to demonstrate readiness to teach and to achieve a grade-point average of 2.5 computed by State Department of Education formula in each of the following: professional teacher education, the teaching major(s), and overall.

Persons with degrees may apply for study in a curriculum leading to professional certification; the above standards must be met to qualify for certification.

Applications and specific information about the criteria for admission to teacher education are available from the Teacher Education Services Office in Haley Center 3464.

## Program Options, Teaching

The following table shows teacher education program options available in the College of Education. Programs appear by department.

Department and Program	Grade Levels				
	N-3	1-6	4-8	7-12	N-12
<b>Curriculum &amp; Teaching</b>					
Early Childhood .....	X				
Elementary .....		X			
General Science .....			X	X	
Language Arts .....			X	X	
Mathematics .....			X	X	
Music, Instrumental .....					X
Music, Vocal Choral .....					X
Social Science .....			X	X	
Two majors from:				X	
Biology .....					
Chemistry .....					
Economics .....					
English .....					
French .....					
Geography .....					
German .....					
History .....					
Mathematics .....					
Physics* .....					
Political Science .....					
Psychology .....					
Sociology .....					
Spanish .....					
<b>Health &amp; Human Performance</b>					
Physical Education .....					X
<b>Rehabilitation &amp; Special Education</b>					
Early Childhood Handicapped .....	X				
Emotionally Conflicted .....					X
Mentally Retarded .....					X
Speech Pathology .....					X
<b>Vocational &amp; Adult Education</b>					
Agribusiness Education .....				X	
Business Education .....				X	
Health Occupations .....				X	
Home Economics .....				X	
Industrial Arts .....					X
Industrial Education (T&I) .....				X	
Marketing Education .....				X	

\*Physics major requires mathematics as second major.

## Requirements for Fields of Specialization

Curriculum models appear below. Curriculum check lists are available in the Office of Teacher Education Services, 3464 Haley Center.

## Curriculum and Teaching

### Curriculum in Early Childhood

FRESHMAN YEAR					
First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	EH	Fine Arts/TH ** ..... 3	EH	Core/Science** ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MU	371 Intr. Music ..... 3		Core/Philosophy** ..... 5	HHP	211 Motor Dev. .... 3
PE	..... 2	HHP	195 Hth. Science ..... 2	EM	200 Ed. Media ..... 2
CTC	102 Orientation ..... 1		Elective ..... 3		Elective ..... 4
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1
SOPHOMORE YEAR					
EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	U	103 Indiv. in Soc. .... 3
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	RSE	376 Surv. Exc. .... 5
	Core/Science** ..... 5		Mathematics/Science ..... 5	CTC	Elective ..... 3
	Core/Mathematics** ..... 5	EC	200 Economics I ..... 5	AT	301 Art ..... 5
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1
JUNIOR YEAR					
EM	510 Media ..... 4	CTC	Elective ..... 3	FCD	301 Hum. Dev. III ..... 5
CTC	355 Surv. EC ..... 3	CTC	315 Lang. Dev. .... 3	CTC	Elective ..... 4
EH	Adv. Comp.** ..... 5	FED	300 Ed. Psych. .... 5	CTC	320 Const. Theory* ..... 3
CTM	304 Music ..... 5	CTR	370 Reading ..... 5	CTR	371 Reading* ..... 5

# College of Education

## SENIOR YEAR

CTC Elective .....	3	CTC 420 Const. Tchr.* .....	3	CTC 425 Intern* .....	15
FED 400 Eval. Meas.* .....	5	CTC 421 Const. Tchr.* .....	3	.....	.....
FED 350 Cult. Fnd.* .....	5	CTC 495a Prac. Pres.* .....	3	.....	.....
CTC 321 Nat. Lrn.* .....	3	CTC 495b Prac. Prim.* .....	4	.....	.....
CCP 322 Hum. Rel.* .....	2	EDL 401 Org. Adm. Sc.* .....	2	.....	.....

TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Elementary Education

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp. ....	5	MH 160 Pre-Cal. w/Trig. ....	5	Core/Philosophy ** .....	5
Core/History ** .....	3	Core/History** .....	3	Core/History** .....	3
SM 101 Concepts. Sci. ....	5	Core/Science** .....	5	Core/Fine Arts** .....	3
CTE 102 Orientation .....	1	ROTC or Elective .....	3	Concentration .....	3
HHP 195 Hlth. Sci. ....	2	.....	.....	ROTC or Elective .....	3

### SOPHOMORE YEAR

EH 220 Great Books I .....	5	HHP 394 Meth. Hlth. .... or		MU 371 Intr. Music .....	3
MH 281 Elem. Math .....	5	HHP 413 Tch. PE El. Sc. ....	3	EC 200 Econ. I. ....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
Concentration .....	5	EH 221 Great Books II .....	5	EM 200 Educ. Media .....	2
.....	.....	PE Elective .....	2	Concentration .....	5
.....	.....	Concentration .....	5	.....	.....

### JUNIOR YEAR

EH Adv. Comp. ** .....	5	CCP 322 Hum. Rel. Tmg.* .....	2	CTR 370 Rdg. Inst. I .....	5
EM 510 Media Inst. ....	4	CTM 304 Mus. Rel. Arts .....	5	EDL 401 Org. Adm. Sch.* .....	2
FED 300 Educ. Psych. ....	5	AT 301 Elem. Sch. Art .....	5	RSE 376 Surv. Excep. ....	5
Concentration .....	5	Concentration .....	5	Concentration .....	5

### SENIOR YEAR

CTE 302 Cur. I LA * .....	5	CTE 303 Cur. I Soc. Sci.* .....	5	CTE 425 Intern* .....	15
CTR 371 Rdg. Inst. II * .....	5	CTE 402 Cur. II Math.* .....	5	.....	.....
FED 400 Meas. Eval.* .....	5	CTE 403 Cur. II Sci.* .....	5	.....	.....
Concentration .....	5	FED 350 Cult. Fnd. Ed.* .....	5	.....	.....

TOTAL HOURS — 213

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in General Science (Middle School)

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp. ....	5	BI 101 Prin. Biol. ....	5	BI 102 Plant Biol. ....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
MH 161 An. Geom. & Calc. ....	5	Core/Fine Arts ** .....	3	GL 110 Geology .....	5
CTS 102 Orientation .....	1	HHP 195 Hlth. Sci. ....	2	EM 200 Ed. Media .....	2
PE ..... 2		Core/Ethics ** .....	5	ROTC or Elective .....	1
ROTC or Elective .....	1	ROTC or Elective .....	1	.....	.....

### SOPHOMORE YEAR

EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	EC 200 Econ. I. ....	5
CH 103 Fund. Chem. I .....	4	CH 104 Fund. Chem. II .....	4	CH Org. Chem. ....	5
CH 103L Gen. Chem. Lab .....	1	CH 104L Gen. Chem. Lab .....	1	Core/History ** .....	3
Core/History** .....	3	Core/History ** .....	3	PS 206 Physics II .....	5
GL 111 Geology .....	5	PS 205 Physics I .....	4	ROTC or Elective .....	1
ROTC or Elective .....	1	ROTC or Elective .....	1	.....	.....

### JUNIOR YEAR

EH Adv. Comp.** .....	5	CH Elective .....	5	CTS 401 Tech. Sci. ....	3
PS 207 Phys. III .....	4	CTR 370 Reading .....	5	PS Elective .....	4
AM/AY Earth/Space .....	5	AM/AY Earth/Space .....	5	Science .....	5
FED 300 Ed. Psych. ....	5	CTD 419 Mid. Sch. ....	5	RSE 376 Surv. Exc. ....	5
.....	.....	.....	.....	FED 350 Cult. Fnd.* .....	5

### SENIOR YEAR

BY/ZY 300-500 .....	5	BY/ZY 300-500 .....	5	CTS 425 Intern* .....	15
CTS 405 Tchng. Sci.* .....	3	CTS 410 Prog. Sci.* .....	3	.....	.....
CCP 322 Hum. Rel.* .....	2	EDL 401 Org. Adm.* .....	2	.....	.....
FED 400 Meas.* .....	5	CTS 415 Trends Sci.* .....	3	.....	.....
CTR 571 Reading* .....	5	Science .....	5	.....	.....

TOTAL HOURS — 220

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in General Science (High School)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	BI	101 Prin. Biol. .... 5	BI	102 Plant Biol. .... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
MH	161 An. Geom. & Calc. .... 5		Core/Fine Arts** .... 3	GL	110 Geology .... 5
CTS	102 Orientation .... 1	HHP	195 Hlth. Sci. .... 2	EM	200 Ed. Media .... 2
PE	..... 2		Core/Philosophy** .... 5		ROTC or Elective .... 1
	ROTC or Elective .... 1		ROTC or Elective .... 1		

## SOPHOMORE YEAR

EH	220 Great Books I .... 5	EH	221 Great Books II .... 5	EC	200 Econ. I .... 5
CH	103 Fund. Chem. I .... 4	CH	104 Fund. Chem. II .... 5	CH	Organic .... 5
CH	103L Gen. Chem. Lab .... 1	CH104L Gen. Chem. Lab .... 1			Core/History** .... 3
	Core/History** .... 3		Core/History** .... 3	PS	206 Physics III .... 5
GL	111 Geology .... 5	PS	205 Physics I .... 4		ROTC or Elective .... 1
	ROTC or Elective .... 1		ROTC or Elective .... 1		

## JUNIOR YEAR

EH	Adv. Comp. ** .... 5	CH	Elective .... 5	CTS	401 Tech. Sci. .... 3
PS	207 Physics III .... 4	PS	Elective .... 4	PS	Elective .... 4
AM/WY	Earth/Space .... 5	AM/WY	Earth/Space .... 5		Science .... 5
FED	300 Ed. Psych. .... 5	CTS	420 Sec. Sch. .... 5	RSE	376 Surv. Exc. .... 5
				FED	350 Cult. Fnd. Ed. * .... 5

## SENIOR YEAR

BY/ZY300-500 .... 5	BY/ZY300-500 .... 5	CTS	410 Prog. Sci. * .... 3	CTS	425 Intern* .... 15
CTS	405 Tchg. Sci. * .... 3	CTS	410 Org. Adm. * .... 2		
AM/WY	Earth/Space .... 5	EDL	401 Org. Adm. * .... 2		
FED	400 Meas. * .... 5	CTS	415 Trends Sci. * .... 3		
CTR	571 Reading* .... 5		Science .... 5		

TOTAL HOURS — 220

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Music - Vocal/Choral

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Mathematics** .... 5		Core/Science** .... 5
	Core/History** .... 3		Core/History** .... 3		Core/History** .... 3
MU	131 Mat. & Org. .... 5	MU	132 Mat. & Org. .... 5	MU	133 Mat. & Org. .... 5
CTM	102 Orientation .... 1	MU	Applied .... 1	MU	Applied .... 1
MU	Ensemble .... 1	MU	Ensemble .... 1	MU	Ensemble .... 1
MU	Fretted Instrument .... 1	MU	Instrumental .... 1	MU	Instrumental .... 1
MU	Applied .... 1		ROTC or Elective .... 1		ROTC or Elective .... 1
	ROTC or Elective .... 1				

## SOPHOMORE YEAR

	Core/Science** .... 5	EH	220 Great Books I .... 5	EH	221 Great Books II .... 5
MU	231 Mat. & Org. .... 5	MU	232 Mat. & Org. .... 5	MU	233 Mat. & Org. .... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
MU	Ensemble .... 1	MU	Ensemble .... 1	MU	Ensemble .... 1
MU	Applied .... 1	MU	Applied .... 1	MU	Applied .... 1
PE	Elective .... 2	HHP	195 Hlth. Sci. .... 2	EM	200 Educ. Media .... 2
MU	Instrumental .... 1		ROTC or Elective .... 1		ROTC or Elective .... 1
	ROTC or Elective .... 1				

## JUNIOR YEAR

EH	Adv. Comp. ** .... 5	FED	350 Cult. Fnd. Ed. * .... 5	EC	200 Econ. I .... 5
FED	300 Educ. Psych. .... 5	CCP	322 Hum. Rel. Trng. * .... 2		Science .... 5
CTM/MUT	Elective .... 2	CTM	304 Mus. Rel. Arts* .... 3	MU	353 Music History III .... 3
MU	351 Music History I .... 3	MU	352 Music History II .... 3	MU	363 Conducting III .... 2
MU	361 Conducting I .... 2	MU	362 Conducting II .... 2	MU	Applied .... 1
MU	Applied .... 1	MU	442 Voc. Ped. .... 3	MU	Ensemble .... 1
MU	Ensemble .... 1	MU	Applied .... 1	MU	553 Choral Lit. .... 3
		MU	Ensemble .... 1		

## SENIOR YEAR

RSE	376 Surv. Exc. .... 5		Core/Philosophy** .... 5	CTM	425 Intern* .... 15
EDL	401 Org. Adm. Ed. * .... 2	FED	400 Meas. & Eval. * .... 5		
CTR	571 Reading* .... 5	CTM	595 Sec. Chor. Meth. * .... 3		
MU	411 Choral Tech. * .... 3	MU	478 Choral Arrang. .... 3		
MU	Applied .... 1	MU	Applied .... 1		
MU	Ensemble .... 1	MU	Ensemble .... 1		
CTM/MUT	Elective .... 2				

TOTAL HOURS — 218

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.



## Curriculum in Music - Instrumental

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Mathematics** ..... 5		Core/Science** ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MU	131 Mat. & Org. .... 5	MU	132 Mat. & Org. .... 5	MU	133 Mat. & Org. .... 5
CTM	102 Orientation ..... 1	MU	Applied ..... 1	MU	Applied ..... 1
MU	Ensemble ..... 1	MU	Ensemble ..... 1	MU	Ensemble ..... 1
MU	Fretted Instrument ..... 1	MU	Instrumental ..... 1	MU	Instrumental ..... 1
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1
		MU	Class Instrument ..... 1		

## SOPHOMORE YEAR

	Core/Science** ..... 5	EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5
MU	231 Mat. & Org. .... 5	MU	232 Mat. & Org. .... 5	MU	233 Mat. & Org. .... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. In Soc. .... 3
MU	Ensemble ..... 1	MU	Ensemble ..... 1	MU	Ensemble ..... 1
MU	Applied ..... 1	MU	Applied ..... 1	MU	Applied ..... 1
MU	Class Instrument ..... 1	HHP	195 Hith. Sci. .... 2	EM	200 Educ. Media ..... 2
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1
		MU	Class Instrument ..... 1	MU	Class Instrument ..... 1

## JUNIOR YEAR

EH	Adv. Comp. ** ..... 5	FED	350 Cult. Fnd. Ed.* ..... 5	EC	200 Econ I ..... 5
FED	300 Educ. Psych. .... 5	CCP	322 Hum. Rel. Trng.* ..... 2		Science ..... 5
MU	409 Mch. Band Tch. .... 2	PE	Elective ..... 2	CTM/MUT	Elective ..... 2
MU	351 Music History I ..... 3	MU	352 Music History II ..... 3	MU	353 Music History III ..... 3
MU	361 Conducting I ..... 2	MU	362 Conducting II ..... 2	MU	363 Conducting III ..... 2
MU	Applied ..... 1	CTM/MUT	Elective ..... 2	MU	Applied ..... 1
MU	Ensemble ..... 1	MU	Applied ..... 1	MU	Ensemble ..... 1
		MU	Ensemble ..... 1		

## SENIOR YEAR

RSE	376 Surv. Exc. .... 5		Core/Philosophy** ..... 5	CTM	425 Intern* ..... 15
EDL	401 Org. Adm. Ed.* ..... 2	FED	400 Meas. & Eval.* ..... 5		
CTR	571 Reading* ..... 5	CTM	594 Sec. Inst. Math.* ..... 3		
CTM	394 Elem. Inst.* ..... 3	MU	477 Instrum. Arrang. .... 3		
MU	Applied ..... 1	MU	Applied ..... 1		
MU	Ensemble ..... 1	MU	Ensemble ..... 1		
MU	Class Instrument ..... 1				

TOTAL HOURS — 218

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in General Social Science (Middle School)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Math** ..... 5		Core/Philosophy** ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. In Soc. .... 3
HHP	195 Hith. Sci. .... 2	PE	Elective ..... 2	CTS	102 Orientation ..... 1
	Core/Science** ..... 5		Core/Science** ..... 5		Science ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	RSE	376 Surv. Exc. .... 5
EC	200 Econ. I ..... 5		Core/Fine Arts** ..... 3	PO	209 Infr. Govt. .... 5
HY	US 300-400 ..... 5	HY	US 300-400 ..... 5	PG	211 Psychology ..... 5
	ROTC or Elective ..... 1	SY	201 Intro. Soc. .... 5	EM	200 Ed. Media ..... 2
			ROTC or Elective ..... 1		ROTC or Elective ..... 1

## JUNIOR YEAR

HY	Europe 300-500 ..... 5	HY	Asian 300-500 ..... 5	GY	215 Cultural ..... 5
PO	312 Comparative ..... 5	PO	300-500 ..... 3	PO	300-500 ..... 5
CTD	419 Mid. Sch. .... 5	GY	214 Phys. Geol. .... 5	EH	Adv. Comp.** ..... 5
FED	300 Ed. Psych. .... 5	FED	350 Cult. Fnd.* ..... 5	CTR	370 Reading ..... 5
FED	400 Eval. Meas.* ..... 5	CTS	415 Curr. Trnd.* ..... 3	CTS	425 Intern* ..... 15
CCP	322 Hum. Rel.* ..... 2	CTS	410 Prog. SS* ..... 3		
CTS	405 Tchg. SS* ..... 3	EDL	401 Org. Adm.* ..... 2		
ANT	203 Intro ..... 5	CTR	571 Reading* ..... 5		

TOTAL HOURS — 210

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in General Social Science (High School)

## FRESHMAN YEAR

## First Quarter

EH	110 Eng. Comp.	5
U	101 Soc. & Cult.	3
HHP	195 Hlth. Sci.	2
	Core/Science**	5
	Core/History**	3
	ROTC or Elective	1

## Second Quarter

U	Core/Math**	5
PE	102 Polit Econ.	3
	Core/Science**	5
	Core/History**	3
	ROTC or Elective	1

## Third Quarter

U	Core/Philosophy**	5
CTS	103 Indiv. in Soc.	3
	102 Orientation	1
	Science	5
	Core/History	3
	ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5
EC	200 Econ. I	5
HY	US 300-400	5
	ROTC or Elective	1

EH	221 Great Books	5
	Core/Fine Arts**	3
HY	US 300-400	5
SY	201 Intro. Soc.	5
	ROTC or Elective	1

RSE	376 Surv. Exc.	5
PO	209 Intr. Govt.	5
PG	211 Psychology	5
EM	200 Ed. Media	2
	ROTC or Elective	1

## JUNIOR YEAR

HY	Europe 300-500	5
PO	312 Comparative	5
CTS	420 Sec. Sch.	5
FED	300 Ed. Psych.	5

HY	Asian 300-500	5
PO	300-500	3
GY	214 Phys. Geol.	5
FED	350 Cult. Fnd.*	5

GY	215 Cultural	5
PO	300-500	5
EH	Adv. Comp.**	5
SY	202 Problems	5

## SENIOR YEAR

FED	400 Eval. Meas.*	5
CCP	322 Hum. Rel.*	2
CTS	405 Tch. SS*	3
ANT	203 Intro	5

CTS	415 Curr. Trnd.*	3
CTS	410 Prog. SS*	3
EDL	401 Org. Adm.*	2
CTR	571 Reading*	5
HY	Laf. Am./Asia/Africa	4

CTS	425 Intern*	15
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TOTAL HOURS — 214

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Language Arts (High School)

## FRESHMAN YEAR

## First Quarter

EH	110 Eng. Comp.	5
	Core/History**	3
	Core/Science**	5
	Core/Math**	5
	ROTC or Elective	1

## Second Quarter

	Core/Fine Arts/TH**	3
	Core/History**	3
	Core/Science**	5
HHP	195 Hlth. Sci.	2
PE	102 Orientation	1
CTS	102 Orientation	1
	ROTC or Elective	1

## Third Quarter

	Core/Philosophy**	5
	Core/History**	3
	Science	5
CTS	205 Communication	3
	ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5
TH	Elective	5
EC	200 Econ. I	5
U	101 Soc. & Cult.	3
	ROTC or Elective	1

EH	221 Great Books II	5
COM	Speech Elective	5
EM	200 Ed. Media	2
U	102 Polit. Econ.	3
	ROTC or Elective	1

EH	470/471 Shakespeare	5
RSE	376 Surv. Exc.	5
FED	300 Ed. Psych.	5
U	103 Indiv. in Soc.	3
	ROTC or Elective	1

## JUNIOR YEAR

EH	400 Adv. Comp.	5
CTS	501 Lang. Study	5
CTS	502 Rhet. Com.	5

EH	Language	5
EH	400-500	5
FED	350 Cult. Fnd.*	5

EH	400-500	5
JM	Elective	4
CTS	420 Sec. School	5
CTR	571 Reading*	5

## SENIOR YEAR

EH	400-500	5
FED	400 Meas. Eval.*	5
CTR	576 Reading	5
CCP	322 Hum. Rel.*	2

EH	400-500	5
CTS	411 Tch. Lang.*	3
CTS	412 Tch. Lit.*	3
CTS	413 Tch. Comp.*	3
EDL	401 Adm. Org.*	2

CTS	425 Intern*	15
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TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Language Arts (Middle School)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5		Core/Fine Arts/TH **	3		Core/Philosophy**	5
	Core/History**	3		Core/History**	3		Core/History**	3
	Core/Science**	5		Core/Science**	5		Science	5
	Core/Math **	5	HHP	195 Hlth. Sci.	2	CTS	205 Communication	3
	ROTC or Elective	1	PE	102 Orientation	2		ROTC or Elective	1
			CTS	102 Orientation	1			
				ROTC or Elective	1			

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	EH	470/471 Shakespeare	5
TH	Elective	5	COM	Speech Elective	5	RSE	376 Surv. Exc.	5
EC	200 Econ. I	5	EM	200 Ed. Media	2	FED	300 Ed. Psych.	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## JUNIOR YEAR

EH	400 Adv. Comp.	5	EH	Language	5	EH	400-500	5
CTS	501 Lang. Study	5	EH	400-500	5	JM	Elective	4
CTS	502 Rhet. Com.	5	FED	350 Cult. Fnd.*	5	CTR	571 Reading	5
CTR	370 Reading	5	CTD	419 Middle School	5			

## SENIOR YEAR

EH	400-500	5	EH	400-500	5	CTS	425 Intern*	15
FED	400 Meas. Eval.*	5	CTS	411 Tch. Lang.*	3			
CTR	576 Reading	5	CTS	412 Tch. Lit.*	3			
CCP	322 Hum. Rel.*	2	CTS	413 Tch. Comp.*	3			
			EDL	401 Org. Adm.*	2			

TOTAL HOURS — 209

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Mathematics (High School)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5		Core/Fine Arts **	3	PA	Ethics**	5
	Core/History**	3		Core/History **	3		Core/History**	3
MH	161 An. Geom. & Calc.	5	MH	162 An. Geom. & Calc.	5	MH	163 An. Geom. & Calc.	5
	Core/Science**	5		Core/Science**	5	CTS	204 Comp. Prog	3
	ROTC or Elective	1	CTS	102 Orientation	1		ROTC or Elective	1
				ROTC or Elective	1			

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	RSE	376 Surv. Exc.	5
MH	264 Calculus IV	5	MH	265 Dif. Equations	3	MH	266 Lin. Algebra	3
EC	200 Econ. I	5	CTS	420 Sec. School	5	HHP	195 Hlth. Sci.	2
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	ROTC or Elective	1		ROTC or Elective	1	PE		2
							ROTC or Elective	1

## JUNIOR YEAR

MH	331 Abst. Algebra	5	MHC (T)	Probability	5	MH	301 Hist. Math	3
MH	Elective	5	MH	Computer Sci.	3	MH	Elective	5
FED	300 Ed. Psych.	5	EM	200 Ed. Media	2	CCP	322 Hum. Rel.*	2
EH	Adv. Comp. **	5	FED	350 Cult. Fnd.*	5	CTD	401 Tch. Math*	4
						CTR	571 Reading*	5

## SENIOR YEAR

MHT	541 Geometry	5	MH	Elective	5	CTS	425 Intern*	15
CTS	402/404 Tch. Math*	3	CTS	403 Tch. Math	3			
FED	400 Meas. Eval.*	5		Electives	6			
EDL	401 Org. Adm.*	2						

TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Mathematics (Middle School)

## FRESHMAN YEAR

First Quarter	
EH 110 Eng. Comp.	5
Core/History**	3
MH 161 An. Geom. & Calc.	5
Core/Science**	5
ROTC or Elective	1

Second Quarter	
Core/Fine Arts**	3
Core/History**	3
MH 162 An. Geom. & Calc.	5
Core/Science**	5
CTS 102 Orientation	1
ROTC or Elective	1

Third Quarter	
PA Ethics**	5
Core/History**	3
MH 163 An. Geom. & Calc.	5
CTS 204 Comp. Prog.	3
ROTC or Elective	1

## SOPHOMORE YEAR

EH 220 Great Books I	5
MH 264 Calculus IV	5
EC 200 Econ. I	5
U 101 Soc. & Cult.	3
ROTC or Elective	1

EH 221 Great Books II	5
MH 265 Dif. Equations	3
CTS 420 Sec. School	5
U 102 Polit. Econ.	3
ROTC or Elective	1

RSE 376 Surv. Exc.	5
MH 266 Lin. Algebra	3
HHP 195 Hth. Sci.	2
U 103 Indiv. in Soc.	3
PE	2
ROTC or Elective	1

## JUNIOR YEAR

MH 331 Abst. Algebra	5
EH Adv. Comp.**	5
FED 300 Ed. Psych.	5

MHC (T) Probability	5
MH Computer Sci.	3
EM 200 Ed. Media	2
FED 350 Cult. Fnd.	5
CTR 370 Reading	5

MH 301 Hist. Math	3
MH Elective	5
CCP 322 Hum. Rel.	2
CTD 401 Tch. Math*	4
CTR 571 Reading*	5

## SENIOR YEAR

MHT 541 Geometry	5
CTS 402 Tch. Math*	3
FED 400 Meas. Eval.*	5
EDL 401 Org. Adm.*	2

MH Electives	10
CTS 403 Tch. Math*	3
CTS 404 Tch. Math*	3

CTS 425 Intern*	15
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TOTAL HOURS — 206

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Biology - Chemistry

## FRESHMAN YEAR

First Quarter	
EH 110 Eng. Comp.	5
U 101 Soc. & Cult.	3
CH 103 Fund. Chem. I	4
CH 103L Gen. Chem. Lab	1
BI 101 Prin. of Biology	5
ROTC or Elective	1

Second Quarter	
Core/Fine Arts**	3
U 102 Polit. Econ.	3
CH 104 Fund. Chem. II	4
CH 104L Gen. Chem. Lab	1
BI 102 Plant Biol.	5
CTS 102 Orientation	1
ROTC or Elective	1

Third Quarter	
Core/Math**	5
U 103 Indiv. in Soc.	3
CH 105 Fund. Chem. III	4
CH 105L Gen. Chem. Lab	1
BI 103 Animal Biol.	5
ROTC or Elective	1

## SOPHOMORE YEAR

CH 207 Organic	5
ZY/BY Physiology	5
Core/History**	3
HHP 195 Hth. Sci.	2
EM 200 Ed. Media	2
ROTC or Elective	1

CH 208 Organic	5
ZY 300 Genetics	5
Core/History**	3
EH 220 Great Books I	5
ROTC or Elective	1

EC 200 Econ. I	5
FED 300 Ed. Psych.	5
Core/History**	3
EH 221 Great Books II	5
ROTC or Elective	1

## JUNIOR YEAR

CH 518 Biochem.	5
BY/ZY 300-500	5
RSE 376 Surv. Exc.	5
CTS 420 Sec. School	5

CH 300-500	5
BY/ZY 300-500	5
EH Adv. Comp.**	5
FED 350 Cult. Fnd.	5

CH 300-500	3
BY/ZY 300-500	5
CTS 401 Tch. Sci.*	3
PS 205 Physics	4

## SENIOR YEAR

PS 206 Physics II	4
CTS 405 Tch. Sci.*	3
CCP 322 Hum. Rel.	2
FED 400 Meas.*	5
PA Ethics**	5

PS 207 Physics III	4
CTS 410 Prog. Sci.*	3
EDL 401 Org. Adm.*	2
CTR 571 Reading*	2
PE	2

CTS 425 Intern*	15
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TOTAL HOURS — 219

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Biology - English

## FRESHMAN YEAR

## First Quarter

EH	110 Eng. Comp.	5
MH	160 Pre-Cal. w/Trig.	5
PE	102 Orientation	1
CTS	ROTC or Elective	1

## Second Quarter

CH	103 Chemistry	3
CH	103L Gen. Chem. Lab	1
	Core/History**	3
BI	101 Prin. of Biol.	5
	Core/Fine Arts**	3
HHP	195 Hlth. Sci.	2
	ROTC or Elective	1

## Third Quarter

CH	104 Chemistry	4
CH	104L Chem. Lab	1
	Core/History**	3
BI	102 Plant Biol.	5
PA	Ethics**	5
	ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5
BI	103 Animal Biol.	5
EC	200 Econ. I	5
U	101 Soc. & Cult.	3
	ROTC or Elective	1

EH	221 Great Books II	5
ZY	300 Genetics	5
FED	300 Ed. Psych.	5
U	102 Polit. Econ.	3
	ROTC or Elective	1

CH	Or. Chem.	5
RSE	376 Surv. Exc.	5
BY/ZY	300-400	5
U	103 Indiv. in Soc.	3
	ROTC or Elective	1

## JUNIOR YEAR

EH	400 Adv. Comp.	5
ZY/BY	Physiology	5
CTS	501 Lang. Study	5
FED	350 Cult. Fnd*	5

EH	470/471 Shakespeare	5
BY/ZY	300-500	5
CTS	401 Tech Sci.*	3
EM	200 Ed. Media	2

CTS	420 Sec. School	5
BY/ZY	300-500	5
CTR	571 Reading*	5
CCP	322 Hum. Rel.*	2
EDL	401 Org. Adm.*	2

## SENIOR YEAR

CTS	502 Rhet. Comp.	5
EH	400-500	5
CTR	576 Rdg. Adol.	5
CTS	410 Prog. Sci.*	3

EH	400-500	5
CTS	411/412/413 Teaching*	6
FED	400 Meas. Eval.*	5

CTS	425 Intern*	15
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TOTAL HOURS — 218

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Biology - Foreign Language \*\*\*

## FRESHMAN YEAR

## First Quarter

FL	121/131/151	5
EH	110 Eng. Comp.	5
U	101 Soc. & Cult.	3
BI	101 Prin. Biol.	5
CTS	102 Orientation	1
	ROTC or Elective	1

## Second Quarter

FL	122/132/152	5
MH	160 Pre Cal. w/Trig.	5
U	102 Polit. Econ.	3
BI	102 Plant Biol.	5
HHP	195 Hlth. Sci.	2
	ROTC or Elective	1

## Third Quarter

FL	123/133/153	5
U	103 Indiv. in Soc.	3
BI	103 Animal Biol.	5
CH	103 Chemistry	5
	ROTC or Elective	1

## SOPHOMORE YEAR

FL	221/231/251	5
EC	200 Econ. I	5
	Core/History**	3
	Core/Philosophy**	5
PE		2
	ROTC or Elective	1

FL	222/232/252	5
EH	220 Great Books I	5
	Core/History**	3
CH	104 Chemistry	5
	Core/Fine Arts**	3
	ROTC or Elective	1

FL	223/233/253	5
EH	221 Great Books II	5
	Core/History**	3
ZY/BY	Physiology	5
	ROTC or Elective	1

## JUNIOR YEAR

FL	321/331/351	3
ZY	300 Genetics	5
FED	300 Ed. Psych.	5
EM	200 Ed. Media	2
CH	Organic	5
	ROTC or Elective	1

FL	322/332/352	3
BY/ZY	300-500	5
CTS	420 Sec. School	5
CCP	322 Hum. Rel.*	2
RSE	376 Surv. Exc.	5

FL	323/333/353	3
BY/ZY	300-500	5
CTS	401 Tch. Sci.*	3
FED	350 Cult. Fnd.*	5
EH	Adv. Comp.**	5

## SENIOR YEAR

FL	300-500	3
BY/ZY	300-500	5
CTS	405 Tchg Sci.*	3
CTS	405 Tchg. FL*	3
FED	400 Meas. Eval.*	5

FL	300-500	5
CTR	571 Reading*	5
CTS	410 Prog. Sci.*	3
CTS	410 Prog. FL*	3
EDL	401 Org. Adm.*	2

CTS	425 Intern*	15
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TOTAL HOURS — 236

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: French, German, Spanish



## Curriculum in Biology - Social Science \*\*\*

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. comp.	5	CH	103 Fund. Chem. I	4	CH	104 Fund. Chem. II	4
U	101 Soc. & Cult.	3	CH	103L Gen. Chem. Lab	1	CH	104L Gen. Chem. Lab	1
	Core/History**	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
BI	101 Biology	5		Core/History**	3		Core/History**	3
PE		2	BI	102 Plant Biol.	5	BI	103 Biology	5
	ROTC or Elective	1		Core/Math**	5	HHP	195 Hlth. Sci.	2
				ROTC or Elective	1	CTS	102 Orientation	1
							ROTC or Elective	1

## SOPHOMORE YEAR

CH	Organic	5	ZY	250 Anatomy	5	ZY	251 Physiology	5
	Social Science Option	5		Social Science Option	5		Social Science Option	5
EC	200 Econ. I	5		Core/Fine Arts**	3	FED	300 Ed. Psych.	5
	Core/Philosophy**	5	EH	220 Great Books I	5	EH	221 Great Books II	5
	ROTC or Elective	1	EM	200 Ed. Media	2		ROTC or Elective	1
				ROTC or Elective	1			

## JUNIOR YEAR

ZY	300 Genetics	5	BY/ZY	300-500	5	BY/ZY	300-500	5
	Social Science Option	5		Social Science Option	5		Social Science Option	5
CTS	420 Sec. Schol.	5	EH	Adv. Comp.**	5	CTS	401 Tech. Sci.	3
RSE	376 Surv. Exc.	5	FED	350 Cult. Fnd.*	5	CTS	421 Soc. Sci.	5

## SENIOR YEAR

	Social Science Option	5		Social Science Option	5	CTS	425 Intern*	15
FED	400 Eval. Meas.*	5	EDL	401 Org. Adm. Ed.*	2			
CTS	405 Tchg. SS*	3	CTS	410 Prg. SS*	3			
CTS	405 Tchg. Sci.*	3	CTS	410 Prg. Sci.*	3			
CCP	322 Hum. Rel.	2	CTR	571 Reading*	5			

TOTAL HOURS BIOLOGY-ECONOMICS — 228

TOTAL HOURS BIOLOGY-SOCIAL SCIENCE OPTION — 233

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: Economics, Geography, History, Political Science, Psychology, Sociology.

## Curriculum in Chemistry - Social Science \*\*\*

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5		Core/Fine Arts**	3	EM	200 Ed. Media	2
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	Core/History**	3		Core/History**	3		Core/History**	3
CH	103 Fund. Chem. I	4	CH	104 Fund. Chem. II	4	CH	105 Fund. Chem. III	4
CH	103L Gen. Chem. Lab	1	CH	104L Gen. Chem. Lab	1	CH	105L Gen. Chem. Lab	1
PE		2		Core/Math**	5	HHP	195 Hlth. Sci.	2
	ROTC or Elective	1		ROTC or Elective	1	CTS	102 Orientation	1
							ROTC or Elective	1

## SOPHOMORE YEAR

CH	207 Organic	5	CH	208 Organic	5		Natural Science	5
	Social Science Option	5		Social Science Option	5		Social Science Option	5
EC	200 Econ. I	5	EH	220 Great Books I	5	FED	300 Ed. Psych.	5
	Core/Philosophy**	5		ROTC or Elective	1	EH	221 Great Books II	5
	ROTC or Elective	1					ROTC or Elective	1

## JUNIOR YEAR

CH	518 Biochemistry	5	CH	300-500	5	CH	300-500	5
	Social Science Option	5		Social Science Option	5		Social Science Option	5
CTS	420 Sec. School	5	EH	Adv. Comp.**	5	CTS	401 Tech. Sci.	3
RSE	376 Surv. Exc.	5	FED	350 Cult. Fnd.*	5	CTS	421 Soc. Sci.	5
CCP	322 Hum. Rel.*	2	EDL	401 Org. Adm.	2	PS	205 Physics I	4

## SENIOR YEAR

	Social Science Option	5		Social Science Option	5	CTS	425 Intern*	15
FED	400 Eval. Meas.*	5	PS	207 Physics III	5			
CTS	405 Tchg. SS*	3	CTS	410 Prog. SS*	3			
CTS	405 Tchg. Sci.*	3	CTS	410 Prog. Sci.*	3			
PS	206 Physics II	4	CTR	571 Reading*	5			

TOTAL HOURS CHEMISTRY-ECONOMICS — 230

TOTAL HOURS CHEMISTRY-SOCIAL SCIENCE OPTION — 235

\* Prerequisite Admission to Teacher Education.

\*\* For University Core Options, see page 39.

\*\*\* Options: Economics, Geography, History, Political Science, Psychology, Sociology.

## Curriculum in Chemistry-Foreign Language \*\*\*

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
FL	121/131/151	5	FL	122/132/152	5	FL	123/133/153	5
EH	110 EngI Comp.	5	CH	103 Fund. Chem. I	4	CH	104 Fund. Chem. II	4
U	101 Soc. & Cult.	3	CH	103L Gen. Chem. Lab	1	CH	104L Gen. Chem. Lab	1
HHP	195 Hth. Sci.	2	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	Core/Fine Arts**	3		Core/Philosophy**	5	CTS	102 Orientation	1
	ROTC or Elective	1		ROTC or Elective	1		Core/Math**	5
							ROTC or Elective	1

## SOPHOMORE YEAR

FL	221/231/251	5	FL	222/232/252	5	FL	223/233/253	5
CH	105 Fund. Chem.	4	CH	207 Organic	5	CH	208 Organic	5
CH	105L Gen. Chem. Lab	1		Core/History**	3	FED	300 Ed. Psych.	5
	Core/History**	3	EH	220 Great Books I	5	EH	221 Great Books II	5
EC	200 Econ. I	5		ROTC or Elective	1		ROTC or Elective	1
	ROTC or Elective	1						

## JUNIOR YEAR

FL	321/331/351	3	FL	322/332/352	3	FL	323/333/353	3
RSE	376 Surv. Exc.	5	PS	205 Physics I	4	PS	206 Physics II	4
CTS	420 Sec. School	5	CTS	401 Tech. Sci.	3	CTS	405 Tchg. FL*	3
	Core/History**	3	CCP	322 Hum. Rel.	2	FED	400 Meas.*	5
EH	Adv. Comp.**	5	FED	350 Cult. Fnd.	5	CTS	410 Prog. FL*	3
			EDL	401 Org. Adm.*	2	CH	300-500	5
			EM	200 Ed. Media	2			

## SENIOR YEAR

FL	300-500	3	FL	300-500	5	CTS	425 Intern*	15
PS	207 Physics III	4	CTR	571 Reading*	5			
CH	300-500	5	CH	518 Biochem.	5			
CTS	405 Tchg. Sci.*	3	CTS	410 Prog. Sc.*	3			
	Science	5	PE		2			

TOTAL HOURS — 238

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: French, German, Spanish.

## Curriculum in English - Chemistry

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5		Core/Philosophy**	5		Natural Science	5
	Core/History**	3		Core/History**	3		Core/History**	3
	Core/Math**	5		Core/Fine Arts**	3	HHP	195 Hth. Sci.	2
CH	103 Fund. Chem. I	4	CH	104 Fund. Chem. II	4	CH	105 Fund. Chem. III	4
CH	103L Gen. Chem. Lab	1	CH	104L Gen. Chem. Lab	1	CH	105L Gen. Chem. Lab	1
CTS	102 Orientation	1	PE		2	EM	200 Ed. Media	2
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	CTS	420 Sec. School	5
CH	207 Organic	5	CH	208 Organic	5	PS	206 Physics II	4
EC	200 Econ. I	5	PS	205 Physics I	4	FED	300 Ed. Psych.	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## JUNIOR YEAR

EH	400 Adv. Comp.	5	EH	470/471 Shakespeare	5	EH	400-500	5
CH	510 Biochem.	5	CH	300-500	5	CH	300-500	3
CTS	501 Lang. Study	5	RSE	376 Surv. Exc.	5	CTR	571 Reading*	5
PS	207 Physics III	4	CTS	405 Tchg. Sci.*	3	CCP	322 Hum. Rel.*	2
						CTS	401 Tech. Sci.*	3

## SENIOR YEAR

CTS	502 Rhet. Comp.	5	EH	400-500	5	CTS	425 Intern*	15
FED	350 Cult. Fnd.*	5	CTS	411/412/413 Teaching*	6			
CTR	576 Rdg. Adol.	5	EDL	401 Org. Adm.*	2			
CTS	410 Prog. Sci.*	3	FED	400 Meas. Eval.*	5			

TOTAL HOURS — 220

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in English - Foreign Language \*\*\*

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
FL	121/131/151.....5	FL	122/132/152.....5	FL	123/133/153.....5
EH	110 Eng. Comp.....5		Core/Science**.....5		Core/Science**.....5
U	101 Soc. & Cult.....3	U	102 Polit. Econ.....3	U	103 Indiv. in Soc.....3
HHP	195 Hlth. Sci.....2		Core/Philosophy**.....5	CTS	102 Orientation.....1
	Core/Fine Arts**.....3		ROTC or Elective.....1		Core/Math**.....5
	ROTC or Elective.....1				ROTC or Elective.....1

## SOPHOMORE YEAR

FL	221/231/251.....5	FL	222/232/252.....5	FL	223/233/253.....5
EH	220 Great Books I.....5	EH	221 Great Books II.....5	RSE	376 Surv. Exc.....5
	Core/History**.....3		Core/History**.....3		Core/History**.....3
EC	200 Econ. I.....5		Science.....5	FED	300 Ed. Psych.....5
	ROTC or Elective.....1		ROTC or Elective.....1		ROTC or Elective.....1

## JUNIOR YEAR

FL	321/331/351.....3	FL	322/332/352.....3	FL	323/333/353.....3
CTS	501 Lang. Study.....5	EH	400 Adv. Comp.....5	EH	470/471 Shakespeare.....5
CTS	502 Rhet. Comp.....5	FED	350 Cult. Fnd.*.....5	CTR	571 Reading*.....5
CTS	420 Sec. School.....5	PE	322 Hum. Rel.*.....2	CTS	405 Tch. FL*.....3
EM	200 Ed. Media.....2	CCP	322 Hum. Rel.*.....2	EDL	401 Org. Adm.*.....2

## SENIOR YEAR

FL	300-500.....3	FL	300-500.....6	CTS	425 Intern*.....15
EH	400-500.....5	EH	410 Prog. FL*.....3		
FED	400 Meas.*.....5	CTS	411/412/413*.....6		
CTR	576 Rdg. Adol.*.....5	EH	400-500.....5		

TOTAL HOURS — 223

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: French, German, Spanish.

## Curriculum in English - Social Science \*\*\*

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp.....5		Core/Philosophy**.....5		Core/Fine Arts**.....3
	Core/History**.....3		Core/History**.....3		Core/History**.....3
PE	Core/Science**.....5		Core/Science**.....5		Science.....5
	ROTC or Elective.....2		Core/Math**.....5	U	101 Soc. & Cult.....3
	ROTC or Elective.....1		ROTC or Elective.....1	HHP	195 Hlth. Sci.....2
				CTS	102 Orientation.....1
					ROTC or Elective.....1

## SOPHOMORE YEAR

EH	220 Great Books I.....5	EH	221 Great Books II.....5	EH	470/471 Shakespeare.....5
	Social Science Option.....5		Social Science Option.....5		Social Science Option.....5
EC	200 Econ. I.....5	EM	200 Ed. Media.....2	FED	300 Ed. Psych.....5
U	101 Soc. & Cult.....3	U	102 Polit. Econ.....3	RSE	376 Surv. Exc.....5
	ROTC or Elective.....1		ROTC or Elective.....1		ROTC or Elective.....1

## JUNIOR YEAR

EH	400 Adv. Comp.....5	EH	400-500.....5	EH	400-500.....5
CTS	420 Sec. School.....5		Social Science Option.....5		Social Science Option.....5
CTS	501 Lang. Study.....5	CTR	571 Reading*.....5	FED	350 Cult. Fnd.*.....5
CTS	502 Rhet. Comp.....5	CCP	322 Hum. Rel.*.....2		
		EDL	410 Org. Adm.*.....2		

## SENIOR YEAR

	Social Science Option.....5		Social Science Option.....5	CTS	425 Intern*.....15
CTS	421 Soc. Sci.....5	CTS	411/412/413*.....6		
CTS	405 Tch. SS*.....3	CTS	410 Prog. SS*.....3		
CTR	576 Rdg. Adol.*.....5	FED	400 Meas. Eval.*.....5		

TOTAL HOURS ENGLISH-ECONOMICS — 215

TOTAL HOURS ENGLISH-SOCIAL SCIENCE OPTION — 220

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: Economics, Geography, History, Political Science, Psychology, Sociology.

## Curriculum for Dual Foreign Language \*\*\*\*

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
FL	121/131/151	5	FL	122/132/152	5	FL	123/133/153	5
FL	221/231/251**	5	FL	222/232/252	5	FL	223/233/253	5
EH	110 Eng. Comp.	5		Core/Science**	5		Core/Science**	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
CTS	102 Orientation	1	HHP	195 Hlth. Sci.	2		ROTC or Elective	1
	ROTC or Elective	1		ROTC or Elective	1			

## SOPHOMORE YEAR

FL	221/231/251	5	FL	222/232/252	5	FL	223/233/253	5
FL	321/331/351	3	FL	322/332/352	3	FL	323/333/353	3
EH	220 Great Books I	5	EH	221 Great Books II	5	EC	200 Econ. I	5
	Core/History**	3		Core/History**	3		Core/History**	3
	Core/Fine Arts**	3	EM	200 Ed. Media	2	FED	300 Ed. Psych.	5
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## JUNIOR YEAR

FL	321/331/351	3	FL	322/332/352	3	FL	323/333/353	3
FL	300-500	3	FL	300-500	3	FL	300-500	3
RSE	376 Surv. Exc.	5	CTS	420 Sec. School	5	FED	400 Meas. Eval.*	5
PE		2	RSE	376 Surv. Exc.	5	CCP	322 Hum. Rel.*	2
EH	Adv. Comp.**	5					Science	5

## SENIOR YEAR

FL	300-500	3	FL	300-500	6	CTS	425 Intern*	15
CTS	405 Tch. FL*	3	CTS	410 Prog. FL*	3			
EDL	401 Org. Adm.*	2	CTR	571 Reading*	5			
	Core/Philosophy**	5						
	Core/Math**	5						

TOTAL HOURS — 235

\* Prerequisite Admission to Teacher Education.

\*\* For University Core Options, see page 39.

\*\*\* Assumes Advanced Placement Credit in one language (15 hours).

\*\*\*\* Options: French, German, Spanish.

## Curriculum In Foreign Language - Social Science

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
FL	121/131/151	5	FL	122/132/152	5	FL	123/133/153	5
EH	110 Eng. Comp.	5		Core/Science**	5		Core/Science**	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
HHP	195 Hlth. Sci.	2		Core/Philosophy**	5	CTS	102 Orientation	1
	Core/Fine Arts**	3		ROTC or Elective	1		Core/Math**	5
	ROTC or Elective	1					ROTC or Elective	1

## SOPHOMORE YEAR

FL	221/231/251	5	FL	222/232/252	5	FL	223/233/253	5
EH	220 Great Books I	5	EH	221 Great Books II	5		Social Science Option	5
	Core/History**	3		Core/History**	3	FED	300 Ed. Psych.	5
EC	200 Econ. I	5		Social Science Option	5	RSE	376 Surv. Exc.	5
EM	200 Ed. Media	2	PE		2		ROTC or Elective	1
	ROTC or Elective	1		ROTC or Elective	1			

## JUNIOR YEAR

FL	321/331/351	3	FL	322/332/352	3	FL	323/333/353	3
	Social Science Option	5		Social Science Option	5		Social Science Option	10
CTS	420 Sec. School	5	CCP	322 Hum. Rel.*	2	FED	400 Meas.*	5
EH	Adv. Comp.**	5	CTS	405 Tch. FL*	3	CTS	410 Prog. FL*	3
	Core/History**	3	FED	350 Cult. Fnd.*	5			
			EDL	401 Org. Adm.	2			

## SENIOR YEAR

FL	300-500	3	FL	300-500	6	CTS	425 Intern*	15
CTS	421 SS Conc.	5	CTR	571 Reading*	5			
	Social Science Option	5		Social Science Option	5			
CTS	405 Tch. SS*	3	CTS	410 Prg. SS*	3			
	Science	5						

TOTAL HOURS FL-ECONOMICS — 233

TOTAL HOURS FL-SOCIAL SCIENCE OPTION — 238

\* Prerequisite Admission to Teacher Education.

\*\* For University Core Options, see page 39.

## Curriculum in Mathematics - Biology

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	PA	Ethics** ..... 5		Natural Science ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MH	161 An. Geom. & Calc. .... 5	MH	162 An. Geom. & Calc. .... 5	MH	163 An. Geom. & Cal. .... 5
BI	101 Principles ..... 5	BI	102 Plant Biol. .... 5	BI	103 Animal Biol. .... 5
CTS	102 Orientation ..... 1	HHP	195 Hlth. Sci. .... 2	CTS	204 Comp. Prog. .... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	RSE	376 Surv. Exc ..... 5
CH	103 Fund. Chem. I ..... 4	CH	104 Fund. Chem. II ..... 4	CH	105 Fund. Chem. III ..... 4
CH	103L Gen. Chem. Lab ..... 1	CH	104L Gen. Chem. Lab ..... 1	CH	105L Gen. Chem. Lab ..... 1
	Core/Fine Arts** ..... 3	EM	200 Ed. Media ..... 2	FED	300 Ed. Psych. .... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
MH	264 An. Geom. & Calc. .... 5	MH	265 Dif. Equat. .... 3	MH	266 Lin. Algebra ..... 3
	..... 2	PE	..... 2		ROTC or Elective ..... 1
	..... 1		ROTC or Elective ..... 1		..... 1

## JUNIOR YEAR

ZY	Physiology ..... 5	ZY	300 Genetics ..... 5	BY/ZY	300-500 ..... 5
CTS	420 Sec. School ..... 5	MH	331 Abs. Algebra ..... 5	MH	301 History of Math ..... 3
EC	200 Econ. I ..... 5	CTR	571 Reading* ..... 5	FED	350 Cult. Fnd.* ..... 5
EH	Adv. Comp.** ..... 5	CCP	322 Hum. Rel.* ..... 2	CTS	401 Tech. Sci. .... 3
	ROTC or Elective ..... 1	EDL	401 Org. Adm.* ..... 2	FED	400 Meas. Eval.* ..... 5

## SENIOR YEAR

MHT	541 Geometry ..... 5	MHC(T)	567 Probability ..... 5	CTS	425 Intern* ..... 15
BY/ZY	300-500 ..... 5	BY/ZY	300-500 ..... 5		..... 5
CTD	401 Tch. Math* ..... 4	CTS	403 Tch. Math* ..... 3		..... 3
CTS	405 Tch. Sci.* ..... 3	CTS	410 Prg. Sci.* ..... 3		..... 3

TOTAL HOURS — 236

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Mathematics - Chemistry

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	PA	Ethics** ..... 5		Natural Science ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History ..... 3
MH	161 An. Geom. & Calc. .... 5	MH	162 An. Geom. & Calc. .... 5	MH	163 An. Geom. & Cal. .... 5
CH	103 Fund. Chem. I ..... 4	CH	104 Fund. Chem. II ..... 4	CH	105 Fund. Chem. III ..... 4
CH	103L Gen. Chem. Lab ..... 1	CH	104L Gen. Chem. Lab ..... 1	CH	105L Gen. Chem. Lab ..... 1
CTS	102 Orientation ..... 1	HHP	195 Hlth. Sci. .... 2	CTS	204 Comp. Prog. .... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	RSE	376 Surv. Exc ..... 5
PS	205 Physics I ..... 4	PS	206 Physics II ..... 4	PS	207 Physics III ..... 4
EC	200 Econ. I ..... 5	EM	200 Ed. Media ..... 2	FED	300 Ed. Psych. .... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
MH	264 Calculus IV ..... 5	MH	265 Dif. Equat. .... 3	MH	266 Lin. Algebra ..... 3
	..... 2	PE	..... 2		ROTC or Elective ..... 1
	..... 1		ROTC or Elective ..... 1		..... 1

## JUNIOR YEAR

CH	207 Organic ..... 5	CH	208 Organic ..... 5	CH	518 Biochem. .... 5
CTS	420 Sec. School ..... 5	MH	331 Abs. Algebra ..... 5	MH	301 Hist. Math ..... 3
	Core/Fine Arts** ..... 3	CTR	571 Reading* ..... 5	FED	350 Cult. Fnd.* ..... 5
EH	Adv. Comp. .... 5	CCP	322 Hum. Rel.* ..... 2	CTS	401 Tech. Sci. .... 3
	ROTC or Elective ..... 1	EDL	401 Org. Adm.* ..... 2	FED	400 Meas. Eval.* ..... 5

## SENIOR YEAR

MHT	541 Geometry ..... 5	MHC(T)	567 Probability ..... 5	CTS	425 Intern* ..... 15
BY/ZY	300-500 ..... 5	BY/ZY	300-500 ..... 5		..... 5
CTD	401 Tch. Math* ..... 4	CTS	403 Tch. Math* ..... 3		..... 3
CTS	405 Tch. Sci.* ..... 3	CTS	410 Prg. Sci. .... 3		..... 3

TOTAL HOURS — 233

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.



## Curriculum in Mathematics - English

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Science** ..... 5		Core/Science** ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MH	161 An. Geom. & Calc. .... 5	MH	162 An. Geom. & Calc. .... 5	MH	163 An. Geom. & Calc. .... 5
PE	..... 2		Core/Fine Arts** ..... 3	PA	Ethics** ..... 5
CTS	102 Orientation ..... 1	HHP	195 Hth. Science ..... 2		ROTC or Elective ..... 1
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	RSE	376 Surv. Exc. .... 5
MH	264 Calculus IV ..... 5	MH	265 Dif. Equat. .... 3	MH	266 Lin Algebra ..... 3
EC	200 Econ. I ..... 5	FED	300 Ed. Psych. .... 5	CTS	204 Comp. Prog. .... 3
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. In Soc. .... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## JUNIOR YEAR

EH	400 Adv. Comp. .... 5	EH	470/471 Shakespeare ..... 5	CTS	420 Sec. School ..... 5
MH	331 Abst. Algebra ..... 5	MHC(T)	567 Probability ..... 5	MH	301 Hist. Math ..... 3
CTS	501 Lang. Study ..... 5	FED	350 Cult. Fnd.* ..... 5	CTR	571 Reading* ..... 5
CTS	502 Rhet. Comp. .... 5	EM	200 Ed. Media ..... 2	CCP	322 Hum. Rel.* ..... 2
				CTD	401 Tch Math ..... 4

## SENIOR YEAR

MHT	541 Geometry ..... 5	EH	400-500 ..... 5	CTS	425 Intern* ..... 15
EH	400-500 ..... 5	CTS	411/412/413* ..... 6		
CTR	576 Rdg. Adol. .... 5	FED	400 Meas. Eval.* ..... 5		
CTS	403 Tch. Math* ..... 3	EDL	401 Org. Adm.* ..... 2		

TOTAL HOURS — 213

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Mathematics - Social Science \*\*\*

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Science** ..... 5		Core/Science** ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. In Soc. .... 3
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MH	161 An. Geom. & Calc. .... 5	MH	162 An. Geom. & Calc. .... 5	MH	163 An. Geom. & Calc. .... 5
PE	..... 2	HHP	195 Hth. Sci. .... 2	CTS	204 Comp. Prog. .... 3
CTS	102 Orientation ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1
	ROTC or Elective ..... 1				

## SOPHOMORE YEAR

MH	264 Calculus IV ..... 5	MH	265 Dif. Equat. .... 3	MH	266 Lin. Algebra ..... 3
	Social Science Option ..... 5		Social Science Option ..... 5		Social Science Option ..... 5
EC	200 Econ. I ..... 5		Core/Fine Arts** ..... 3	FED	300 Ed. Psych. .... 5
PA	Ethics** ..... 5	EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5
	ROTC or Elective ..... 1	EM	200 Ed. Media ..... 2		ROTC or Elective ..... 1
			ROTC or Elective ..... 1		

## JUNIOR YEAR

MH	331 Abs. Algebra ..... 5	MH	541 Geometry ..... 5	MH	301 Hist. Math ..... 3
	Social Science Option ..... 5		Social Science Option ..... 5		Social Science Option ..... 5
CTS	420 Sec. School ..... 5	CTR	571 Reading* ..... 5	EH	Adv. Comp.** ..... 5
RSE	376 Surv. Exc. .... 5	FED	350 Cult. Fnd.* ..... 5	FED	400 Meas. Eval. .... 5

## SENIOR YEAR

	Social Science Option ..... 5		Social Science Option ..... 5	CTS	425 Intern* ..... 15
CCP	322 Hum. Rel.* ..... 2	MHC(T)	567 Probability ..... 5		
CTS	405 Tchg. SS* ..... 3	CTS	410 Prog. SS* ..... 3		
CTD	401 Tchg. Math* ..... 4	CTS	403 Tchg. Math* ..... 3		
CTS	421 Soc. Sci. .... 5	EDL	401 Org. Adm.* ..... 2		

TOTAL HOURS MATHEMATICS - ECONOMICS — 223

TOTAL HOURS MATHEMATICS - SOCIAL SCIENCE — 228

\* Prerequisite Admission to Teacher Education.

\*\* For University Core Options, see page 39.

\*\*\* Options: Economics, Geography, History, Political Science, Psychology, Sociology.

## Curriculum in Mathematics - Physics

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	PA	Ethics** ..... 5		Natural Science ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MH	161 An. Geom. & Calc. .... 5	MH	162 An. Geom. & Calc. .... 5	MH	163 An. Geom. & Calc. .... 5
PE	..... 2	CH	103 Fund. Chem. I ..... 4	CH	104 Fun. Chem. II ..... 4
	Core/Fine Arts** ..... 3	CH	103L Gen. Chem. Lab ..... 1	CH	104L Gen. Chem. Lab ..... 1
CTS	102 Orientation ..... 1	HHP	195 Hlth. Sci. .... 2	CTS	204 Comp. Prog. .... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	RSE	376 Surv. Exc. .... 5
PS	220 Physics I ..... 4	PS	221 Physics II ..... 4	PS	222 Physics III ..... 4
Ec	200 Econ. I ..... 5	EM	200 Ed. Media ..... 2	FED	300 Ed. Psych. .... 5
U	101 Soc. & Culture ..... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
MH	264 Calculus IV ..... 5	MH	269 Dif. Equat. .... 5	MH	266 Lin. Algebra ..... 3
	..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## JUNIOR YEAR

EH	Adv. Comp.** ..... 5	PS	301 El. & Mag. .... 4	PS	302 Electronics ..... 4
CTS	420 Sec. School ..... 5	MH	331 Abs. Algebra ..... 5	MH	301 Hist. Math ..... 3
MH	501 Cal. Vect. .... 5	CTR	571 Reading* ..... 5	FED	350 Cult. Fnd.* ..... 5
PS	300 El. & Mag. .... 4	CCP	322 Hum. Rel.* ..... 2	CTS	401 Tech. Sci. .... 3
	ROTC or Elective ..... 1	EDL	401 Org. Adm.* ..... 2	FED	400 Meas. Eval.* ..... 5

## SENIOR YEAR

MHT	541 Geometry ..... 5	MHC(T)	567 Probability ..... 5	CTS	425 Intern* ..... 15
PS	303 Optics ..... 4	PS	Electives ..... 8		.....
CTD	401 Tch. Math* ..... 4	CTS	403 Tch. Math* ..... 3		.....
CTS	405 Tch. Sci.* ..... 3	CTS	410 Prog. Sci.* ..... 3		.....
PS	Elective ..... 4		.....		.....

TOTAL HOURS — 238

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Mathematics - Foreign Language \*\*\*

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
FL	121/131/151 ..... 5	FL	122/132/152 ..... 5	FL	123/133/153 ..... 5
EH	110 Eng. Comp. .... 5		Core/Science** ..... 5		Core/Science** ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
MH	161 An. Geom. & Calc. .... 5	MH	162 An. Geom. & Calc. .... 5	MH	163 An. Geom. & Calc. .... 5
	ROTC or Elective ..... 1		ROTC or Elective ..... 1	CTS	102 Orientation ..... 1
	.....		.....		ROTC or Elective ..... 1

## SOPHOMORE YEAR

FL	221/231/251 ..... 5	FL	222/232/252 ..... 5	FL	223/233/253 ..... 5
EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	PA	Ethics** ..... 5
	Core/History** ..... 3		Core/History** ..... 3	EC	200 Econ. I ..... 5
MH	264 Calculus IV ..... 5	MH	265 Dif. Equat. .... 3	MH	266 Lin. Algebra ..... 3
HHP	195 Hlth. Sci. .... 2	EM	200 Ed. Media ..... 2	CTS	204 Comp. Prog. .... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC or Elective ..... 1

## JUNIOR YEAR

FL	321/331/351 ..... 3	FL	322/332/352 ..... 3	FL	323/333/353 ..... 3
MH	331 Abst. Algebra ..... 5	MHC(T)	567 Probability ..... 5	MH	301 Hist. Math ..... 3
FED	300 Ed. Psych. .... 5	CTS	420 Sec. School ..... 5	CTD	401 Tch. Math* ..... 4
	Core/History** ..... 3	CCP	322 Hum. Rel.* ..... 2	FED	350 Cult. Fnd.* ..... 5
EH	Adv. Comp.** ..... 5	RSE	376 Surv. Exc. .... 5	CTR	571 Reading* ..... 5

## SENIOR YEAR

FL	300-500 ..... 3	FL	300-500 ..... 6	CTS	425 Intern* ..... 15
MHT	541 Geometry ..... 5		Core/Fine Arts** ..... 3		.....
CTS	403 Tch. Math* ..... 3	EDL	401 Org. Adm. .... 2		.....
CTS	405 Tch. FL* ..... 3	CTS	410 Prog. FL* ..... 3		.....
FED	400 Meas. Eval.* ..... 5	PE	..... 2		.....

TOTAL HOURS — 231

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: Economics, Geography, History, Political Science, Psychology, Sociology.

## Curriculum for Dual Social Sciences \*\*\*

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5		Core/Math**	5		Core/Philosophy**	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
HHP	195 Hlth. Sci.	2	PE		2	CTS	102 Orientation	1
	Core/Science**	5		Core/Science**	5		Science	5
	Core/History**	3		Core/History**	3		Core/History**	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	RSE	376 Surv. Exc.	5
	Social Science Option	10		Social Science Option	10		Social Science Option	10
EC	200 Econ. I	5		Core/Fine Arts**	3	EM	200 Ed. Media	2
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## JUNIOR YEAR

	Social Science Option	10		Social Science Option	10		Social Science Option	10
CTS	420 Sec. School	5	EH	Adv. Comp.**	5	CTR	571 Reading*	5
FED	300 Ed. Psych.	5	FED	350 Cult. End.*	5	CTS	421 Soc. Sci.	5

## SENIOR YEAR

	Social Science Option	10		Social Science Option	10	CTS	425 Intern*	15
FED	400 Eval. Meas.*	5	CTS	415 Curr. Trnd*	3			
EDL	401 Org. Adm.*	2	CTS	410 Prog. SS*	3			
CTS	405 Tchg. SS*	3	CCP	322 Hum. Rel.*	2			

TOTAL HOURS ECONOMICS-SOCIAL SCIENCE — 222

TWO FROM SOCIAL SCIENCE OPTION — 227

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\* Options: Economics, Geography, History, Political Science, Psychology, Sociology.

## Health and Human Performance

## Curriculum in Physical Education

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	SM	101 Concepts Sci.	5		Core/Math**	5
	Core/History**	3		Core/History**	3		Core/History**	3
HHP	100 Fund. Move.	3	NF	200 Nutr. & Hlth	3	HHP	122 Tm. Sport I	3
HHP	201 Hy. & Prin.	3	HHP	120 Gymnastics	3		124 Tm. Sport II	1
HHP	102 Orientation	1	PE	101 Phys. Fit. & App.	2	HHP	211 Motor Dev.	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5		Core/Philosophy	5
BI	101/105	5	EC	200 Econ. I	5	ZY	250 Anatomy	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
HHP	118 Ind. Act. I	1		Core/Fine Arts**	3	HHP	119 Ind. Act. II	3
PE	135 Weight Trng.	2	HHP	195 Hlth. Sci.	2	HHP	121 Aquatics	2

## JUNIOR YEAR

EH	Adv. Comp.**	5	ZY	251 Physiology	5	FED	350 Cult. End.*	5
CCP	322 Hum. Rel.*	2	FED	300 Ed. Psych.	5	RSE	376 Surv. Exc.	5
HHP	123 Dance	3	HHP	200 Tch. & Coach.	5	HHP	315 Kinesiology	4
HHP	416 Adapt Pe	3	HHP	413 Tch. PE Elem.	3	HHP	Elective	4
HHP	423 Prog. PE*	5						

## SENIOR YEAR

HHP	414 Tch. PE Sec.*	3	CTR	571 Reading*	5	HHP	425 Intern*	15
EDL	401 Org. Adm. Ed.*	2	FED	400 Meas. & Eval.*	5			
HHP	426 Eval. & Meas.*	3	HHP	404 Athl. Injuries	3			
HHP	429 Mtr. Lm. Pr.	4	HHP	405 Phys. of Exercise	4			
HHP	494 First Aid	3						
EM	200 Ed. Media	2						

TOTAL HOURS — 210

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Rehabilitation and Special Education

## Curriculum in Early Childhood for the Handicapped

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	Core/Science** ..... 5	U	Core/Science** ..... 5	
U	101 Soc. & Cult. .... 3	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3	
	Core/Math** ..... 5	Core/Philosophy** ..... 5		Core/Fine Arts** ..... 3	
PE	..... 2	195 Hth. Sci. .... 2	FCD	267 Hum. Dev. I ..... 4	
	ROTC** ..... 1	ROTC** ..... 1	RSE	102 Orientation ..... 1	
	..... 1	..... 1	RSE	104 Intr. Lab Exp. .... 1	
	..... 1	..... 1		ROTC** ..... 1	

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	EC	200 Econ. I ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MH/SCI	..... 5	RSE	375 Intr. RSE ..... 5	FED	300 Ed. Psych. .... 5
FCD	301 Hum. Dev. III ..... 5	FED	280 Hum. Dev. II ..... 4	PG	350 Behav. Mod. .... 5
	ROTC** ..... 1		ROTC** ..... 1		ROTC** ..... 1

## JUNIOR YEAR

EH	Adv. Comp.** ..... 5	FED	350 Cult. Fnd.* ..... 5	RSE	588 Ed. Appr.* ..... 5
EM	200 Ed. Media ..... 2	EDL	401 Org. Adm. Ed.* ..... 2	RSE	479 Meth. & Mtrls. .... 5
RSE	587 Parent ..... 4	RSE	421 Ed. Diag. .... 5	RSE	300 Curr. Plng.* ..... 5
RSE	550 Lang. Dev. .... 5	CTC	302 Const. Number ..... 3	RSE	377 Intr. MR ..... 5

## SENIOR YEAR

RSE	420 Org. Inst.* ..... 5	RSE	378/529 ..... 5	RSE	425 Intern* ..... 15
FED	400 Eval. Meas.* ..... 5	RSE	541 Sign/CD 450 Prin. .... 4		.....
CCP	322 Hum. Rel.* ..... 2	RSE	495 Practicum ..... 3		.....
RSE	495 Practicum ..... 3	CTR	370 Reading ..... 5		.....

## TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\*Students not electing ROTC schedule RSE 446 (6).

## Curriculum in Emotionally Conflicted

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	Core/Science** ..... 5	U	Core/Science** ..... 5	
U	101 Soc. & Cult. .... 3	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3	
	Core/Math** ..... 5	Core/Philosophy** ..... 5		Core/Fine Arts** ..... 3	
PE	..... 2	HHP	195 Hth. Sci. .... 2	RSE	378 Intr. BD ..... 5
	ROTC or Elective ..... 1		ROTC or Elective ..... 1	RSE	102 Orientation ..... 1
	..... 1	RSE	104 Intr. Lab ..... 1		ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	EC	200 Econ. I ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
MH/SCI	..... 5	RSE	375 Intr. RSE ..... 5	FED	300 Ed. Psych. .... 5
EM	200 Ed. Media ..... 2		Major Course ..... 5	HHP	416 Adapt. PE ..... 4
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		ROTC** ..... 1

## JUNIOR YEAR

EH	Adv. Comp.** ..... 5	FED	350 Cult. Fnd.* ..... 5	RSE	421 Ed. Diag. .... 5
RSE	300 Curr. Plng.* ..... 5	EDL	401 Org. Adm. Ed.* ..... 2	RSE	301 Curr. Plng.* ..... 5
PG	435/536 ..... 5	CTR	370 Reading ..... 5	RSE	450/537 Occ. Orient. .... 5
	..... 5	RSE	420 Org. Inst. .... 5	RSE	495 Practicum ..... 2

## SENIOR YEAR

RSE	446 Dir. Ind. Study ..... 3	RSE	586 Severe ..... 3	RSE	425 Intern* ..... 15
FED	400 Eval. Meas.* ..... 5	RSE	479 Meth. Mtrls. .... 5		.....
CCP	322 Hum. Rel.* ..... 2	CTR	570/571* Reading ..... 5		.....
RSE	495 Practicum ..... 4	RSE	415/556 Tchg./Res ..... 6		.....
	Major Course ..... 4		.....		.....

## TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Mental Retardation

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. ....5		Core/Science** .....5		Core/Science** .....5
U	101 Soc. & Cult. ....3	U	102 Polit. Econ. ....3	U	103 Indiv. In Soc. ....3
	Core/Math** .....5		Core/Philosophy** .....5		Core/Fine Arts** .....3
PE	.....2	HHP	195 Hlth. Sci. ....2	CD	350 Intr. SP. Path. ....5
	ROTC or Elective .....1		ROTC or Elective .....1	RSE	102 Orientation .....1
		RSE	104 Intr. Lab. ....1		ROTC or Elective .....1

## SOPHOMORE YEAR

EH	220 Great Books I .....5	EH	221 Great Books II .....5	EC	200 Econ. I .....5
RSE	300 Curr. Ping.* .....3		Core/History** .....3	RSE	301 Curr. Ping.* .....3
MH/SCI	.....5	RSE	375 Intr. RSE .....5	FED	300 Ed. Psych. ....5
EM	200 Ed. Media .....2	RSE	377 Intr. MR .....5	HHP	418 Adapt. PE .....4
	ROTC or Elective .....1		ROTC or Elective .....1		ROTC or Elective .....1

## JUNIOR YEAR

EH	Adv. Comp.** .....5	FED	350 Cult. Fnd.* .....5	RSE	421 Ed. Diag. ....5
RSE	300 Curr. Ping.* .....5	EDL	401 Org. Adm. Ed.* .....2	RSE	301 Curr. Ping.* .....5
RSE	378 Intr. BD .....5	CTR	370 Reading .....5	RSE	537 Occ. Orient. ....5
RSE	450 Spec. Topics .....1	RSE	420 Org. Inst. ....5	RSE	495 Practicum .....2
		RSE	450 Spec. Topics .....1	RSE	450 Spec. Topics .....1

## SENIOR YEAR

RSE	448 Dir. Ind. Study .....4	RSE	586 Severe .....3	RSE	425 Intern* .....15
FED	400 Eval. Meas.* .....5	RSE	479 Meth. Mtrls. ....5		.....
CCP	322 Hum. Rel.* .....2	CTR	570/571 Reading* .....5		.....
RSE	495 Practicum .....2	RSE	495 Practicum .....2		.....
RSE	585 Moderate MR .....3	RSE	450 Spec. Topics .....1		.....
RSE	450 Spec. Topics .....1				.....

TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Speech Pathology

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. ....5	SM	101 Concepts. Sci. ....5		Core/Science** .....5
U	101 Soc. & Cult. ....3	U	102 Polit. Econ. ....3	U	103 Indiv. In Soc. ....3
	Core/Philosophy** .....5		Core/Math** .....5		Core/Fine Arts** .....3
PE	.....2	HHP	195 Hlth. Sci. ....2		MH or Science .....5
			Elective*** .....1	RSE	102 Orientation .....1

## SOPHOMORE YEAR

EH	220 Great Books I .....5	EH	221 Great Books II .....5	EC	200 Econ. I .....5
CD	355 Spch. Sci.*** .....5	RSE	375 .....5	CD	341 Phonetics .....4
	Core/History** .....3		Core/History** .....3		Core/History** .....3
CD	350 Intr. SP .....5	CD	340 Sp. Hr. Mech. ....5	FED	300 Ed. Psych. ....5

## JUNIOR YEAR

CD	560 Int. Aud. ....5	CD	561 Hrg. Path. ....5	CD	562 Hrg. Eval. ....5
CD	551 Artic .....5	CD	552 Lang. Acq. ....5	CD	553 Fluency .....5
EH	Adv. Comp.** .....5	FED	350 Fnd. Ed.* .....5	CD	558 Intr. Clin. ....4
EM	200 Ed. Media .....2	EDL	401 Org. Schls.* .....2	CD	465/565 .....3

## SENIOR YEAR

CD	554 Voc. Dis. ....5	RSE	421N Org. Inst. ....5	RSE	425 Intern* .....15
CD	559 Practicum .....1	RSE	479N Meth./Mat.* .....5		.....
RSE	420 Org. Inst.* .....5	CTR	370 Reading* .....5		.....
FED	400 Meas.* .....5	CD	559 Clinic .....1		.....
CCP	322 Hum. Rel.* .....2	RSE	495/446/450 .....3		.....

TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\*Not for ROTC students; ROTC students take one hour ROTC per quarter for six quarters.



## Vocational and Adult Education

## Curriculum in Agribusiness Education

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	CH	**	4	CH	**	4
U	101 Soc. & Cult.	3	CH	Lab**	1	CH	Lab**	1
	Core/Math**	5	U	102 Polit. Econ.	3	U	103 Indiv. In Soc.	3
VED	102 Orientation	1		Core/Fine Arts**	3		Core/Philosophy**	5
PE		2	HHP	195 Hlth. Sc I.	2		Ag. Elective	5
	ROTC or Elective	1	COM	Speech Elective	3		ROTC or Elective	1
				ROTC or Elective	1			

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	AEC	210 Microcomp.	3
EC/AEC	200 Economics	5	ADS	200 An. Dairy Sci.	5	AY	307 Gen. Soils	5
BV/BY	Elective	5	PH/FY	Elective	5	AEC	301 Ag. Mktg.	5
	Core/History**	3		Core/History**	3		Core/History**	3
	ROTC or Elective	1		ROTC or Elective	1		Ag. Elective	3
							ROTC or Elective	1

## JUNIOR YEAR

HF	221 Landscape	5	FED	300 Ed. Psych.	5	FED	350 Cult. Fnd.*	5
HF	202 Fruit Veg.	5	CCP	322 Hum. Rel.*	2	AEC	501 Farm Mgt.	5
VED	408 Gen. Shop	3		Ag. Elective	5	EDL	401 Org. Adm.*	2
VED	404/406/407	3	RSE	376 Surv. Exc.	5	VED	404/406/407	3
EM	200 Ed. Media	2	VED	346 Voc. Educ.	3	EH	Adv. Comp.**	5

## SENIOR YEAR

VED	414 Prog. Ag.*	3		Ag. Elective	5	VED	425 Intern**	15
VED	415 Tchg. Ag.*	5	CTR	571 Reading*	5			
ENT	502 Ec. Entom.	5		Ag. Elective	5			
FED	400 Meas. Eval.*	5						

## TOTAL HOURS — 217

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Business Education

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	COM	Speech Elective	3		Core/Math**	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. In Soc.	3
	Core/Science**	5		Core/Science**	5		Sciences	5
VED	102 Orientation	1	PE		2	HHP	195 Hlth. Sci.	2
	Core/Fine Arts**	3		ROTC or Elective	1	EM	200 Ed. Media	2
	ROTC or Elective	1					ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	AC	212 Accounting II	4
EC	200 Econ. I	5	MT	241 Bus. Law	4	FED	300 Ed. Psych.	5
MN	207/EM 370 Comp.	3		Core/Philosophy**	5	RSE	376 Surv. Exc.	5
	Core/History**	3		Core/History**	3		Core/History**	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## JUNIOR YEAR

VED	302 Adv. Kyb.	5	EH	408 B&P Writ.	5	FED	350 Cult. Fnd.*	5
VED	312 Shand. Tr.	5	CCP	322 Hum. Rel.*	2	FED	400 Meas. Eval.*	5
MN	310 Prin. Mgt.	5	VED	346 Voc. Ed.	3	VED	430 Adv. Info.	5
FI	340/FCD 323	3	VED	420 Info. Proc.	5		VED/Bus. Elective	3
			EDL	401 Org. Adm.*	2			

## SENIOR YEAR

VED	414 Prog. Bus.*	3	VED	558 Coord. Supr.	5	VED	425 Intern*	15
VED	415 Tchg. Bus.*	5	CTR	571 Reading*	5			
VED	440 Elec. Off.	5	VED	462/421	5-10			
VED	574 Org. Inst.	5		VED/Bus. Elective	0-5			

## TOTAL HOURS — 211

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Health Occupations

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	COM	Elective	3		Core/Philosophy**	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
BI	101 Prin. Biol.	5	BI	106 Hum. Biol.	5		Physical Science	5
VED	102 Orientation	1	HHP	195 Hlth. Sci.	2	PE		2
	Core/History**	3		Core/History**	3		Core/History**	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## SOPHOMORE YEAR

EH	220 Great Books I	5	EH	221 Great Books II	5	EM	200 Ed. Media	2
	Core/Math**	5	EC	200 Econ. I	5	FED	300 Ed. Psych.	5
	Core/Fine Arts**	3	VED	346 Voc. Ed.	3	RSE	376 Surv. Exc.	5
NF	200/358	3	VED	475 Tech. Exp.	5	VED	476 Tech. Exp.	5
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## JUNIOR YEAR

VED	352 Med Term.	5	VED	346 Hlth. Deliv.	5	VED	354 Hlth. Cnrs.	5
CCP	322 Hum. Rel.*	2	VED	478 Tech. Exp.	5	FED	400 Meas. Eval.*	5
EDL	401 Org. Adm. Ed.*	2	VED	479 Tech. Exp.	5	FED	350 Cult. Fnd.*	5
EH	Adv. Comp.**	5	VED	558 Coord. Sprv.	5	VED	477 Tech. Exper.	5
VED	520 Spec. Nds.	5						

## SENIOR YEAR

VED	414 Prog. Hlt.*	3	VED	415 Tchg. Hlth.*	5	VED	425 Intern*	15
CTR	571 Reading*	5	VED	462 Dir. Wk.	5			
VED	480 Tech. Exp.	5	VED	495 Practicum	5			
VED	495 Practicum	5	VED	574 Org. Instr.	5			

## TOTAL HOURS — 222

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Home Economics Education

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	BI	105 Persp. Biol.	5	BI	107 Environ. Biol.	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
	Core/Math**	5	HHP	195 Hlth. Sci.	2	NF	200 Nutr. Hlth.	3
VED	102 Orientation	1	PE		2	CA	115 Clothing	3
	Core/History**	3		Core/History**	3		Core/History**	3
	ROTC or Elective	1	FCD	157 Family	3		ROTC or Elective	1
				ROTC or Elective	1			

## SOPHOMORE YEAR

EH	220 Great Books II	5	EH	221 Great Books II	5	EM	200 Ed. Media	2
EC	200 Econ. I	5	CA	116 Art for Liv.	3	CA	206 Garment Str.	3
	Science	5	NF	202 Prin. Food Pr.	5		Core/Fine Arts**	3
CA	222 Furnishings	4	FCD	200 Mgt. Consum.	4	RSE	376 Surv. Exc.	5
	ROTC or Elective	1		ROTC or Elective	1		Core/Philosophy**	5
							ROTC or Elective	1

## JUNIOR YEAR

NF	204 Food Mgt.	5	FCD	308 Fam. IV	3	FED	350 Cult. Fnd.*	5
FCD	269 Fam. I	4	CA	255 Textiles	3	EDL	401 Org. Adm.*	2
CA	431 Man-Environment	2	NF	206 Food & Hlth.	3	NF	304 Quantity Fd.	5
COM	Elective	3	EH	Adv. Comp.**	5	CTR	571 Reading*	5
FED	300 Ed. Psych.	5	CCP	322 Hum. Rel.*	2	FCD	323 Consum. Mkt.	3
			VED	346 Voc. Ed.	3			

## SENIOR YEAR

VED	412 Prog HE*	3	VED	411 Tchg. Home Ec.*	5	VED	425 Intern*	15
VED	495 Practicum	6	VED	462 Dir. Wk.	5			
CA	233 Res. Equip.	4	FED	400 Meas. Eval.*	5			
FCD	467 Parent Ed.	4						

## TOTAL HOURS — 217

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Industrial Arts

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Science** ..... 5		Core/Philosophy ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
	Core/Math** ..... 5	PE	195 Hlth. Sci. .... 2	IE	102 Graphics ..... 3
VED	102 Orientation ..... 1	HHP	Core/History** ..... 3	COM	Elective ..... 3
	Core/History** ..... 3		ROTC or Elective ..... 1		Core/History** ..... 3
	ROTC or Elective ..... 1				ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	EM	200 Ed. Media ..... 2
	Core/Science** ..... 5		Science ..... 5	VED	457 Graph. Arts ..... 3
VED	400 Power Mech. .... 3	VED	301 Woodwkg. .... 3	VED	346 Voc. Ed. .... 3
EC	200 Econ. I ..... 5	VED	401 Sm. Engines ..... 3	VED	402 Auto. Const. .... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1	VED	406 Bldg. Const. .... 3
					ROTC or Elective ..... 1

## JUNIOR YEAR

VED	404 Metals ..... 3	VED	246 Inst. Drwg. .... 3	VED	444 Envir. Syst. .... 3
VED	216 Plastics ..... 2	RSE	376 Surv. Exc. .... 5	VED	407 Electricity ..... 3
VED	408 Gen. Shop ..... 3	CA	345 Crafts ..... 3	CCP	322 Hum. Rel.* ..... 2
EH	Adv. Comp.** ..... 5	VED	405 School Shop ..... 3	CTR	571 Reading* ..... 5
FED	300 Ed. Psych. .... 5	VED	409 Tchg. Electr. .... 3		Major Electives ..... 7

## SENIOR YEAR

VED	442 Metalwkg. .... 3	VED	414 Prog. Ind. Arts* ..... 3	VED	425 Intern* ..... 15
FED	350 Cult. Fnd.* ..... 5	VED	415 Tchg. Ind. Arts* ..... 5		
AR	360 App. Arch. .... 3	FED	400 Meas. Eval.* ..... 5		
EDL	401 Org. Adm. Ed.* ..... 2	VED	556 Lrng. Res.* ..... 5		
	Major Electives ..... 6				

## TOTAL HOURS — 210

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Industrial Education

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Science** ..... 5		Core/Science** ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
	Core/Math** ..... 5	PE	195 Hlth. Sci. .... 2	VED	102 Orientation ..... 1
	Core/History** ..... 3	HHP	Core/History** ..... 3	COM	Elective ..... 3
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		Core/History** ..... 3
					ROTC or Elective ..... 1

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	EM	200 Ed. Media ..... 2
	Science ..... 5	EC	200 Econ. I ..... 5		Core/Philosophy** ..... 5
	Major Option ..... 5		Major Option ..... 5		Major Option(s) ..... 6
	Elective ..... 2		ROTC or Elective ..... 1		Core/Fine Arts** ..... 3
	ROTC or Elective ..... 1				ROTC or Elective ..... 1

## JUNIOR YEAR

VED	466 Tchg. Grps. .... 3	VED	346 Voc. Ed. .... 3	VED	462 Dir. Wk. Exp. .... 5
VED	510 Occ. Info. .... 3	RSE	376 Surv. Exc. .... 5	VED	405 Sch. Shop ..... 3
MN	310 Prin. Mgt. .... 5	MN	443 Labor Rel. .... 5	CCP	322 Hum. Rel.* ..... 2
EH	Adv. Comp.** ..... 5	FED	300 Ed. Psych. .... 5	CTR	571 Reading* ..... 5
	Elective ..... 2			EDL	401 Org. Adm. Sch. * ..... 2

## SENIOR YEAR

VED	574 Org. Inst. TI ..... 5	VED	414 Prog. T&I* ..... 3	VED	425 Intern* ..... 15
FED	350 Cult. Fnd.* ..... 5	VED	415 Tchg. T&I* ..... 5		
VED	558 Coord. Supr. .... 5	FED	400 Meas. Eval.* ..... 5		
	Elective ..... 3	VED	556 Lrng. Res. .... 5		

## TOTAL HOURS — 204

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

## Curriculum in Marketing Education

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	COM	Elective	3	U	Core/Philosophy**	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3		103 Indiv. In Soc.	3
	Core/Math**	5		Core/Science**	5		Core/Science**	5
PE		2	HHP	195 Hlth. Sci.	2	EM	200 Ed. Media	2
VED	102 Orientation	1		Core/Fine Arts**	3		ROTC or Elective	1
	ROTC or Elective	1		ROTC or Elective	1			
SOPHOMORE YEAR								
EH	220 Great Books I	5	EH	221 Great Books II	5		Science	5
	Core/History**	3		Core/History**	3		Core/History**	3
EC	200 Econ. I	5	EC	202 Econ. II	5	VED	346 Voc. Ed.	3
ACF	211/FI 340	3	MT	241 Bus. Law**	5	MT	331 Prin. Mkt.	5
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1
JUNIOR YEAR								
EC	350 Labor Econ.**	5	MN	310 Prin. Mgt.	5	EH	Adv. Comp.**	5
VED	510 Occ. Info.	3	VED	556 Lmg. Res.	5	VED	482 Dir. Wk. Exp.	5
FED	300 Ed. Psych.	5	FED	350 Cult. Fnd.	5	CTR	571 Reading*	5
RSE	378 Surv. Exc.	5	CCP	322 Hum. Rel.*	2	EDL	401 Org. Adm.*	2
							Elective	2
SENIOR YEAR								
VED	414 Prog. DE*	3	VED	415 Tchng. DE*	5	VED	425 Intern*	15
MT	372 Transport**	5	VED	558 Coord.	5			
MT	332 Mktg.**	5	MT	333 Merch. Mgt.	5			
FED	400 Meas. Eval.*	5	MT	347 Selling**	5			

TOTAL HOURS — 210

\*Prerequisite Admission to Teacher Education.

\*\*For University Core Options, see page 39.

\*\*\*Or other course from approved program.

## Field Experiences

The Laboratory Experiences Program provides sequential learning opportunities in public school and community settings for all students throughout the teacher preparation program. Laboratory experiences are provided primarily through the following programs: (1) **Field Experience Program**, (2) **Extended Laboratory Experiences** including a para-professional level program for secondary majors, (3) **Cooperative Education Program** and (4) **Professional Internship**.

The pre-teaching **Field Experience Program** provides an initial experience for all students as a prerequisite for admission to the Professional Teacher Education Program. Students are required to participate in the program in conjunction with Career Exploration and Planning, or in Orientation for Transfer Students. This experience involves the students in planning and evaluating learning experiences, counseling, participating in pre-school conferences and faculty study, school and community meetings and involvement in actual teaching situations.

The **Extended Laboratory Experiences Program** is conducted concurrently with enrollment in professional education courses which provide experiences in the schools and communities.

The **Co-operative Education Program** provides laboratory experiences for certain students involved in the teacher preparation program on an alternating quarter arrangement with college attendance.

The **Professional Internship** is a full-time assignment in an off-campus school and community. Experiences include personal and professional contacts with various phases of community life and the application of concepts, skills and knowledge the students have acquired in classroom situations.

The students enroll for 15 credit hours and devote a full quarter to the internship. No additional coursework, correspondence or regular, is permitted during the internship quarter. The program is divided into orientation, off-campus experience and evaluation. Students must be admitted to the Teacher Education Program prior to the Professional Internship and must have completed appropriate courses in their areas of specialization.

The Internship for students in N-12 Programs requires experience in both elementary and secondary schools.

Other laboratory experiences for students are provided within the framework of courses in the Teacher Education Program.

## Dual Objectives Program

Students in other schools and colleges of the university who wish to complete requirements for graduation in an academic department and also to complete the degree requirements of the Teacher Education Program may pursue the dual objectives program. Students should inquire in their dean's office to determine if their college/school participates in the dual objectives program.

Students electing to pursue the dual objectives program will have an advisor in the academic department in which they are enrolled and an advisor in the College of Education. Advising students concerning the curriculum of the academic department, including the major and other requirements, will be the responsibility of the advisor in that department. The responsibility for advising students on matters concerning the Teacher Education Program will be that of the advisor in the College of Education. The quarterly course schedule of the students will be approved by both advisors. Information describing the dual objectives program is available in the Teacher Education Services Office of the College of Education in Haley Center and in the dean's office where the students are enrolled.

Students enrolled in the College of Education who desire to complete certification requirements in more than one teaching field will complete the curriculum in each field: general studies, teaching specialization and professional teacher education (including the internship).

Applications and specific information about the criteria for selection and admission to Teacher Education are available in the Teacher Education Services Office in Haley Center 3464.

## Programs, Non-Teaching

The following is a list of non-teaching program options available in the College of Education. Programs appear by department.

## Health and Human Performance

**Exercise Science.** A non-teaching program designed to prepare students for research and graduate studies related to exercise sciences. This program does not require admission to Teacher Education. A senior paper (HHP 446) is required for graduation.

### Curriculum in Exercise Science

FRESHMAN YEAR					
First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp.	5	PS 200 Fnds. Physics	5	Core/Math**	5
Core/History**	3	Core/History**	3	Core/History**	3
BI 101 Prin. Biol.	3	BI 106 Hum. Biol.	5	COM Speech	3
BI 105 Persp. Biol.	5	Core/Fine Arts**	3	HHP 195 Hlth. Sci.	2
HHP 102 Orientation	1	PE Skill	2	HHP 280 Fnd. Hlth. Ed.	3
PE 101 Physical Fitness	2			PE Skill	2
SOPHOMORE YEAR					
EH 220 Great Books I	5	EH 221 Great Books II	5	Core/Philosophy**	5
ZY 250 Anatomy	5	ZY 251 Physiology	5	EM 200 Ed. Media	2
U 101 Soc. & Cult.	3	U 102 Polit. Econ.	3	U 103 Indiv. in Soc.	3
HHP 282 Intr. LS	3	NF 200 Nutr. & Hlth.	3	PG 212 Dev. Psych.	5
PE Fitness	2	PE Fitness	2	ROTC or Elective	3
JUNIOR YEAR					
EH 370 Microcomp.	4	HHP 315 Kinesiology	4	HHP 426 Eval. & Meas.	3
EH Adv. Comp.**	5	HHP 405 Phys. of Exerc.	4	HHP 495 Practicum	3
HHP 335 Sports Psych.	4	HHP 396 Drug Use Abuse	3	Minor Electives	6
HHP 221 Motor Dev.	3	Minor Electives	6	ROTC or Electives	3
SENIOR YEAR					
HHP 495 Practicum	3	HHP 495 Practicum	3	HHP 446 Sr. Project	5
HHP 429 Mtr. Learning	4	HHP 416 Adaptive PE	3	HHP 505 Pr. Adult Ftl.	4
HHP 404 Athl. Inj.	0	HHP Electives	3	HHP Electives	3
HHP 494 First Aid	3	Minor Electives	7	Minor Elective	3
HHP Elective	3				
Minor Elective	3				

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.



**Health Promotion.** A non-teaching program designed to prepare students to become health and fitness specialists for a variety of settings such as hospitals, corporate fitness centers, wellness centers, private/commercial health complexes, etc. This program does not require admission to Teacher Education. However, a related internship (HHP 425) is an integral part of the professional preparation.

### Curriculum in Health Promotion

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	Computer Elective .....	3	Core/Math** .....	5
	Core/History** .....	Core/History** .....	3	Core/History** .....	3
BI	101 Prin. Biol. .... or	106 Hum. Biol. ....	5	COM Speech .....	3
BI	105 Persp. Biol. .... 5	EM 200 Ed. Media .....	2	NF 200 Nutr. & Hlth. ....	3
PE	Fitness .....	PE Fitness .....	2	HHP 280 Fnd. Hlth. Ed. ....	3
PE	101 Physical Fitness .....	HHP 102 Orientation .....	1		

#### SOPHOMORE YEAR

EH	220 Great Books I .....	EH	221 Great Books II .....	Core/Philosophy** .....	5
ZY	250 Anatomy .....	ZY	251 Physiology .....	Core/Fine Arts** .....	3
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U 103 Indiv. in Soc. ....	3
HHP	195 Hlth. Sci. .... 2	HHP	282 Intr. Leisure Svcs. ....	HHP 396 Drug Use Abuse .....	3
PE	135 Weight Trng. .... 2	PE Skill .....	2	HHP 121 Aquatics .....	2

#### JUNIOR YEAR

HHP	494 First Aid .....	HHP	404 Athl. Inj. .... 3	HHP	405 Phys. Exercise .....	4
HHP	386 Ldrshp. LS .....	HHP	426 Eval. & Meas. .... 3	HHP	400 Prof. Leis. Svc. ....	5
HHP	296 Comm. Hlth. .... 3	HHP	Elective .....	4	EH 408 B&P Writ. ....	5
HHP	315 Kinesiology .....	HHP	429 Mtr. Lm. Perf. ....	4	ROTC or Elective .....	3
	Minor Elective .....		ROTC or Elective .....	3		

#### SENIOR YEAR

HHP	505 Pr. Adult Ftl. .... 4	HHP	495 Prac. HELP .....	3	HHP	425 Intern .....	15
	Minor Elective .....	HHP	475 Hlth. Prom. Wkp. ....	3			
	Minor Elective .....		Minor Elective .....	5			
	Minor Elective .....		Minor Elective .....	3			
			Minor Elective .....	3			

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

**Recreation and Sports Management.** A non-teaching program designed to prepare students to become recreation, park and sports complex managers and/or administrators. This program does not require admission to Teacher Education. However, a related internship (HHP 425) is an integral part of the professional preparation.

### Curriculum in Recreation and Sports Management

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	Core/Philosophy** .....	5	Core/Math** .....	5
BI	101 Prin. Biol. .... or	NF 200 Nutr. & Hlth. ....	3	U 101 Soc. & Cult. ....	3
BI	105 Persp. Biol. .... 5	Core/Fine Arts** .....	3	EM 200 Ed. Media .....	2
HHP	102 Orientation .....	HHP 195 Hlth. Sci. ....	2	COM Speech .....	3
PE	101 Physical Fitness .....	HHP 121/351 Aquatics .....	2	Core/Science** .....	5
	Computer Elective .....				

#### SOPHOMORE YEAR

	Core/History**	3		Core/History**	3			Core/History**	3
EH	220 Great Books I	5	EH	221 Great Books II	5			Exercise Sci.	4
HHP	282 Intr. Leis.	3	HHP	386 Ldrshp. Leis. Svc.	3	HHP		388 Camp Mgt.	3
U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3	PE		Skill	2
ZY	250 Anatomy	5	ZY	251 Physiology	5			Electives	1
								ROTC or Elective	3

#### JUNIOR YEAR

HHP	Plan. & Eval. ....	3	ACF	211 Accounting I .....	4	HHP	384 P&R Maint. ....	3
EH	Adv. Comp.** .....	5	MN	310 Prin. Mgt. .... or		HHP	Option .....	10
HHP	Option .....	3	PO	325 Intr. Pub. Adm. ....	5	HHP	Hlth. Sci. ....	3
HHP	396 Drug Use Abuse .....	3	HHP	400 Rec. Prog. ....	5	PE	Skill .....	2
	ROTC or Electives .....	3	HHP	485 Social Rec. ....	3			

#### SENIOR YEAR

MT	241 Bus. Law .....	or	COM	Elective .....	5	HHP	425 Internship .....	15
MT	255 Leg. Environ. ....	4-5	HHP	450 Spec. Topics .....	3			
HHP	424 Intramural .....	3	MN	342 Hum. Res. Mgt. .... or				
HHP	Option .....	7	PO	515 Public PA .....	3-5			
HHP	Plan. & Eval. ....	3	HHP	Option .....	5			

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Rehabilitation and Special Education

**Rehabilitation Services Education.** This non-teaching program does not require completion of the Professional Education Core.

### Curriculum in Rehabilitation Services

FRESHMAN YEAR								
First Quarter			Second Quarter		Third Quarter			
EH	110 Eng. Comp.	5		Core/Science**	5	Core/Science**	5	
U	101 Soc. & Cult.	3	U	102 Polit Econ.	3	U	103 Indiv. in Soc.	3
	Core/History**	3		Core/History**	3		Core/History**	3
COM	100 Speech	3		Elective	5		Core/Philosophy**	5
PE		2		ROTC or Elective	1		ROTC or Elective	1
	ROTC or Elective	1						
SOPHOMORE YEAR								
EH	220 Great Books I	5	EH	221 Great Books II	5	RSE	102 Orientation	1
	Core/Math**	5	RSE	375 Intr. Rehab.	5	FED	300 Ed. Psych.	5
	Core/Fine Arts**	3	ZY	251 Physiology	5	CCP	322 Hum. Rel.	2
ZY	250 Anatomy	5		ROTC or Elective	1	PG	211 Psychology	5
	ROTC or Elective	1				RSE	330 Careers Rehab.	5
							ROTC or Elective	1
JUNIOR YEAR								
EM	200 Ed. Media	2	RSE	495 R Practicum	2	RSE	414 Assessment	3
FED	350 Cult. Fnd.	5	CCP	523 Med. Aspects	3	RSE	537 Occ. Orient.	5
CCP	522 Counseling	4	CCP	524 Comm. Resources	3	RSE	495 R Practicum	2
PG	315 Quant. Math.	5	CCP	525 Adjustment	3	RSE	446 Dir. Ind. Study	5
			EH	Adv. Comp.**	3		Elective	5
SENIOR YEAR								
RSE	535 Voc. Eval.	5	RSE	495 R Practicum	2	RSE	425 Intern	15
RSE	538 Work Adjustment	5	RSE	510 Occ. Info.	3			
RSE	495 R Practicum	2	RSE	536 Voc. Eval.	3			
	Elective	5	RSE	556 Lmg. Res.	5			
			RSE	415 Tchg. Rehab.	3			

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Vocational and Adult Education

### Curriculum in Adult Education - Agriculture

FRESHMAN YEAR														
First Quarter					Second Quarter					Third Quarter				
EH	110	Eng. Comp.	5	CH	103	Fund. Chem.	4	CH	104	Fund. Chem.	4			
U	101	Soc. & Cult.	3	CH	103L	Gen. Chem. Lab.	1	CH	104L	Gen. Chem. Lab.	1			
		Core/Math**	5	U	102	Polit. Econ.	3	U	103	Indiv. in Soc.	3			
VED	102	Orientation	1			Core/History**	3			Core/History**	3			
BI	101	Prin. Biol.	5			Core/Fine Arts**	3	ADS	200	A&D Sci.	5			
		ROTC or Elective	1			Core/Philosophy**	5			ROTC or Elective	1			
						ROTC or Elective	1							
SOPHOMORE YEAR														
EH	220	Great Books I	5	EH	221	Great Books II	5	HF	221	Landscp. Gard.	5			
EC/AEC	200	Econ.	5			Ag. Elective	3			Ag. Elective	5			
HF	202	Fruit & Veg.	5	AY	200	Crop Prod.	5	FED	300/PG 212	5				
		Core/History**	3	AEC	200	Microcomputer	3			ROTC or Elective	1			
		ROTC or Elective	1			ROTC or Elective	1							
JUNIOR YEAR														
AEC	301	Ag. Mkt.	5	AY	307	Gen. Soils	5			Ag. Elective	5			
		Ag. Elective	5	VED	469	Comm. Prog.	5			Ag. Elective	5			
VED	408	Gen. Shop	3			Ag. Elective	5			Voc. Ed. Elective	4			
VED	406	Bldg. Const.	3					EH		Adv. Comp.**	5			
VED	466	Tch. OS Gr.	3											
SENIOR YEAR														
ENT	502	Entomology	5	VED	556	Lrn. Res.	5	VED	425	Intern	10			
VED	513	Na. Adult. Ed.	5	VED	415	Tch. Adult Ed.	5							
VED		Elective	4	AEC	501	Farm Mgt.	5							
VED	450	Spec. Top.	3											

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Curriculum in Adult Education - Distributive

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	EM	200 Ed. Media ..... 2		Core/Philosophy** ..... 5
	Core/Math** ..... 5		Distrib. Elective ..... 4	U	Elective ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3		103 Indiv. in Soc. .... 3
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
VED	102 Orientation ..... 1		Core/Fine Arts** ..... 3		ROTC or Elective ..... 1
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		
SOPHOMORE YEAR					
EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	VED	466 Tch. OS Gr. .... 3
	Core/Science** ..... 5		Core/Science** ..... 5	AC	211 Prin. Acct. I ..... 4
EC	200 Econ. I ..... 5	EC	202 Econ. II ..... 5	MT	241 Bus. Law I ..... 5
	ROTC or Elective ..... 1		ROTC or Elective ..... 1	PG	212 Dev. Psych. .... 5
					ROTC or Elective ..... 1
JUNIOR YEAR					
MN	310 Prin. Mgt. .... 5	VED	469 Comm. Prog. .... 5	VED	415 Tchg. Ad. Ed. .... 5
MT	331 Prin. Mkt. .... 5	MT	347 Fund. Selling ..... 5	MT	372 Prin. Transport. .... 5
EM	370 Microcomputers ..... 4	FED	400 Meas. Eval. .... 5	VED	482 Dir. Wk. Exp. .... 5
EH	Adv. Comp.** ..... 5	VED	346 Voc. Ed. .... 3		Distrib. Elective ..... 3
SENIOR YEAR					
VED	450 Sp. Top. AE ..... 3	VED	513 Nat. Adult Ed. .... 5	VED	425 Intern ..... 15
VED	556 Lrn. Res. .... 5	VED	104 Orientation Lab ..... 1		
CCP	521 Counseling ..... 4	VED	446 Dir. Ind. Study ..... 5		
	Distrib. Elective ..... 5		Distrib. Elective ..... 5		

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Curriculum in Adult Education - Health Systems

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	HHP	195 Hth. Sci. .... 2		Core/Philosophy** ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
VED	102 Orientation ..... 1		Core/Math** ..... 5		Core/Fine Arts** ..... 3
	ROTC or Elective ..... 1		Elective ..... 2		Elective ..... 2
	Elective ..... 2		ROTC or Elective ..... 1		ROTC or Elective ..... 1
SOPHOMORE YEAR					
EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	MT	241 Bus. Law ..... 5
	Core/Science** ..... 5		Core/Science** ..... 5	EM	370 Computer ..... 4
VED	352 Med. Term. .... 5	VED	356 Hth. Del. Syst. .... 5	FED	300/PG 212 ..... 5
	ROTC or Elective ..... 1		Hth. Syst. Elective ..... 3		Hth. Syst. Elective ..... 4
			ROTC or Elective ..... 1		ROTC or Elective ..... 1
JUNIOR YEAR					
VED	556 Lrng. Res. .... 5	VED	450 Sp. Topics ..... 3	VED	482 Dir. Wk. Exp. .... 5
VED	466 Tch. OS Gr. .... 3	VED	469 Comm. Prog. .... 5	VED	476 Tech. Exp. .... or
MN	310 Prin. Mgt. .... 5	VED	495 Practicum ..... 2		Hth. Syst. Elective ..... 5
	Hth. Syst. Elective ..... 5	VED	513 Nat. Adult Ed. .... 5	VED	477 Tech. Exp. .... or
		VED	475 Tech. Exp. .... or		Hth. Syst. Elective ..... 5
			Hth. Syst. Elective ..... 5	EH	Adv. Comp.** ..... 5
SENIOR YEAR					
VED	478 Tech. Exp. .... or	VED	480 Tech. Exp. .... or	VED	425 Intern ..... 10
	Hth. Syst. Elective ..... 5		Hth. Syst. Elective ..... 5		
VED	479 Tech. Exp. .... or	VED	104 Orient. Lab ..... 1		
	Hth. Syst. Elective ..... 5	VED	495 Practicum ..... 3		
CCP	521 Counseling ..... 4		Hth. Syst. Electives ..... 8		
VED	495 Practicum ..... 3				

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Curriculum in Adult Education - Home Economics

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	Core/Math** ..... 5	CA	140 App. Prod. .... 5	
NF	200 Nutr Hlth. .... 3	CA	118 Art for Living .... 3	NF/CA/FCD	..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. In Soc. .... 3
VED	102 Orientation .... 1		Core/Science** ..... 5		Core/Science** ..... 5
FCD	157 Fam. Hum. Dev. .... 3		Elective ..... 2		ROTC or Elective ..... 1
CA	115 Clothing ..... 3		ROTC or Elective ..... 1		
	ROTC or Elective ..... 1				

## SOPHOMORE YEAR

	Core/Philosophy** ..... 5	EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
NF/CA/FCD	..... 8		Core/Fine Arts** ..... 3	FED	300 Ed. Psych. .... 5
	ROTC or Elective ..... 1	NF/CA/FCD	..... 6	NF/CA/FCD	..... 4
			ROTC or Elective ..... 1		ROTC or Elective ..... 1

## JUNIOR YEAR

EM	370/570 ..... 4	VED	462 Dir. Wk. Exp. .... 5	EH	Adv. Comp.** ..... 5
NF/CA/FCD	..... 12	CCP	521 Counseling ..... 4	VED	466 Tch. OS Gr. .... 3
		NF/CA/FCD	..... 7		Electives ..... 9

## SENIOR YEAR

VED	495 Practicum ..... 5	VED	415 Tchg. Adults ..... 5	VED	425 Intern ..... 10
VED	469 Comm. Prog. .... 5		104 Orient Lab ..... 1	VED	450 Sp. Topics ..... 3
VED	556 Lmg. Res. .... 5	VED	513 Nat. Adult Ed. .... 5		
	Elective ..... 2		Elective ..... 4		

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Curriculum in Adult Education - Technical

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	Elective ..... 3		Core/Science** ..... 5	
	Core/Fine Arts** ..... 3	Core/Math** ..... 5		Core/Philosophy ..... 5	
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. In Soc. .... 3
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
	Elective ..... 3	VED	102 Orientation ..... 1		ROTC or Elective ..... 1
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	VED	415 Tch. Adults ..... 5
	Core/Science** ..... 5	EM	370 Comp. App. .... 4	VED	450 Spec. Topics ..... 3
VED	475-480 ..... or	VED	475-480 ..... or	VED	475-480 ..... or
	Technical Elective ..... 5		Technical Elective ..... 5		Technical Elective ..... 5
	Elective ..... 3		ROTC or Elective ..... 1	VED	489 Comm. Prog. .... 5
	ROTC or Elective ..... 5				ROTC or Elective ..... 1

## JUNIOR YEAR

VED	513 Nat. Adit. .... 5	FED	300 Ed. Psych. .... 5	FED	400 Meas. Eval. .... 5
VED	475-480 ..... or	VED	475-480 ..... or	VED	475-480 ..... or
	Technical Elective ..... 5		Technical Elective ..... 5		Technical Elective ..... 5
VED	541 Dev. V Ed. .... 5	VED	574 Org. Instruct. .... 5	VED	520 Stu. Sp. Nds. .... 5
VED	466 Tch OS Gr. .... 3	VED	510 Occ. Info. .... 3	EH	Adv. Comp.** ..... 5

## SENIOR YEAR

VED	591 Prob. Tchg. .... 5	VED	556 Learn. Res. .... 5	VED	425 Intern ..... 10
VED	558 Coord. .... 5	VED	104 Orient Lab ..... 1	VED	448/495/462 ..... 3
VED	448/495/462 ..... 5	VED	521 Counseling ..... 4		
		VED	448/495/462 ..... 5		

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Curriculum in Adult Education - Training and Conference

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5		Core/Fine Arts** ..... 3		Core/Philosophy** ..... 5
U	101 Soc. & Cult. .... 3	U	102 Polit. Econ. .... 3	U	103 Indiv. in Soc. .... 3
	Core/History** ..... 3		Core/History** ..... 3		Core/History** ..... 3
VED	102 Orientation .... 1	EM	200 Ed. Media ..... 2	COM	141 Grp. Prob. .... 5
	Core/Math** ..... 5	JM	101 Newsp. Style ..... 3		ROTC or Elective ..... 1
	ROTC or Elective ..... 1		Elective ..... 2		
			ROTC or Elective ..... 1		

## SOPHOMORE YEAR

EH	220 Great Books I ..... 5	EH	221 Great Books II ..... 5	VED	466 Tch. OS Gr. .... 3
	Core/Science** ..... 5		Core/Science** ..... 5	EM	370 Computer ..... 4
MT	241 Bus. Law ..... 5	JM	304 Int. Pub. Rel. .... 5	FED	300/PG 212 ..... 5
	ROTC or Elective ..... 1		ROTC or Elective ..... 1		Elective ..... 3
					ROTC or Elective ..... 1

## JUNIOR YEAR

MN	310 Prin. Mgt. .... 5	VED	469 Comm. Prog. .... 5	VED	415 Tch. Ad. Ed. .... 5
FED	400 Meas. Eval. .... 5	MN	342 Hum. Res. Mgt. .... 5	VED	556 Lmg. Res. .... 5
EH	408 B&P Writ. .... 5	CCP	521 Counseling ..... 4		Elective Area Sp. .... 5
	Elective Area Sp. .... 3	VED	495 Practicum ..... 3	VED	495 Practicum ..... 3

## SENIOR YEAR

VED	450 Spec. Topics ..... 3	VED	513 Nat. Adlt. Ed. .... 5	VED	425 Intern ..... 15
	Elective ..... 5	VED	104 Orient. Lab ..... 1		
PG	562 Trng. Supv. .... 3	VED	591 Prob. Dis. Ad. .... 5		
	Elective Area Sp. .... 5		Elective Area Sp. .... 5		
VED	446 Dir. Ind. Study ..... 2	VED	448 Dir. Ind. Study ..... 2		

TOTAL HOURS — 204

\*\*For University Core Options, see page 39.

## Graduate Programs

Graduate programs are offered through the Graduate School in administration and supervision, counselor education, educational media, elementary education, health education, music education, physical education, rehabilitation services, secondary education, special education and vocational and adult education. Fifth and sixth-year programs of study in the above areas lead to the degrees of Master of Science, Master of Education, and Specialist in Education. Nondegree graduate study is also available through the Diploma Program leading to sixth-year certification.

Doctoral degrees are offered in educational leadership, counselor education, early childhood education, elementary education, health education, music education, physical education, secondary education, rehabilitation, special education and vocational and adult education. Specializations in secondary education include the following sub-specializations: (a) English education, (b) mathematics education, (c) science education and (d) social science education. See *Graduate School Bulletin* for program options for Doctor of Education and Doctor of Philosophy degrees.

## Related Programs and Services

## Teacher Certification Services

Programs in the College of Education are approved by the National Council for Accreditation of Teacher Education (NCATE), the National Association of State Directors of Teacher Education and Certification (NASDTEC), the Interstate Reciprocity Compact (IRC) and the Alabama State Board of Education for certifying superintendents, supervisors, principals, counselors, elementary and secondary teachers and educational media specialists. Upon satisfactory completion of a prescribed course of study and upon recommendation of the Dean of the College of Education a professional certificate will be issued by the appropriate State Department of Education. Twenty-eight State Departments of Education now have reciprocal agreements for issuing certificates to graduates of institutions accredited by NCATE.

Students in schools other than the College of Education who wish to complete requirements for graduation in an academic department and also to complete the degree requirements of the Teacher Education Program may pursue the dual objectives program. Students may also take courses in education and psychology for acquiring knowledge and understanding of human growth and development and teaching as a profession. They are eligible to take all such courses for which they satisfy prerequisites.



Students may complete courses in preparation for entering the Fifth-Year Program which offers initial teacher certification at the master's level. Information about the Fifth-Year Program is available from the departmental office where the program is offered. See the *Graduate Bulletin* for more information.

### Vocational Rehabilitation Service

HOWARD, HUDSON, AND PATTERSON, *Counselors*

The State Department of Education in cooperation with Auburn University maintains the local Rehabilitation Service which provides vocational guidance, counseling, training and placement services to handicapped citizens. The Rehabilitation Service also makes available to handicapped citizens such services as: surgical and/or medical care, hospitalization, therapeutic treatment, and artificial appliances, when these services are essential to training and/or employment and the individual is not financially able to secure them.

### Learning Resources Center

The Learning Resources Center (LRC), located in Haley Center, is a service component for the College of Education and the College of Liberal Arts. The LRC provides media services which include filmstrips, transparencies, disc recordings, tape recordings, kits, educational games and programs of instruction. LRC personnel assist the faculty and students with the production, selection and utilization of learning materials.

# College of Engineering

WILLIAM F. WALKER, *Dean*

M. DAYNE ALDRIDGE, *Associate Dean*

JOSEPH S. BOLAND III, *Associate Dean*

EDWARD O. JONES, *Associate Dean*

JOHN M. OWENS, *Associate Dean*

ENGINEERS in the 1990s will be faced with worldwide problems and expectations awesome in responsibility yet exciting as professional challenges. These range from the extremes of interplanetary exploration through earth orbiting systems to the problems arising mainly from our population explosion: energy, better productivity, housing, transportation and environmental issues.

As a renewed appreciation develops for the contributions of science and technology, engineering leaders are calling for engineers, who are better equipped to tackle the specific, technical problems of the future. Significantly, they also are calling for engineers who by breadth of education and understanding of other disciplines can convince others of the role of engineers not only in technical matters but in policy decisions to insure the use of technology to benefit mankind. We hope, therefore, we are entering an era in which science and technology will receive a more objective assessment.

Engineering education at Auburn provides in a four-year curriculum both the technical knowledge and the broad general education necessary to equip engineers for their problem-solving challenges. Centered on mathematics and the physical sciences, the curricula also stress the importance of social sciences, humanities and communication skills. Auburn's engineering programs enable individuals to develop their natural talents and provide knowledge, skills and understanding that will help them to find their places in society as well as in their vocations.

## Admission

**Freshmen** eligibility is determined by the Admissions Office. However, since the requirements for engineering education necessitate high school preparatory work of high intellectual quality and of considerable breadth, the following program is recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry, and analytical geometry), four units; chemistry, one unit; history, literature, social science, two or three units. Physics and foreign languages are recommended but not required.

**Transfers from Other Institutions** must apply through the Admissions Office. The exact placement of these students can be determined only upon review of their transcripts by the College of Engineering.

The College of Engineering allows credit for courses completed with satisfactory grades (C or better) provided the courses correspond in time and content to courses offered at Auburn. Courses that are taught at the 300-level or higher at Auburn are generally not transferable from junior colleges.

Many courses required by the College of Engineering are highly specialized in their content and potential transfer students need to select courses with care. Therefore, to insure maximum transferability of credits, students are encouraged to contact the College as soon as possible about acceptable credits.

**Transfers from On-Campus** must be approved by the College of Engineering and the admissions committee of the chosen curriculum, and meet the same academic requirements as off-campus transfer students.

## Programs

### Undergraduate

**Pre-Engineering** — The Pre-Engineering Program consists of a freshman program of studies to prepare students for curricula in the College of Engineering. It also provides academic and career counseling to assist students in determining the curriculum that best fulfills their personal and educational objectives.

**Professional Programs** — Curricula accredited by the national accrediting agency, the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), lead to the degrees of Bachelor of Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering, Materials

Engineering, Mechanical Engineering, and Bachelor of Science in Agricultural Engineering. The curriculum leading to the Bachelor of Computer Science is accredited by the Computer Science Association Commission of the Computing Sciences Accreditation Board. The curriculum leading to the Bachelor of Textile Management and Technology is accredited by the Technology Accreditation Commission of ABET. The Department of Textile Engineering also administers curricula leading to the degrees of Bachelor of Textile Engineering and Bachelor of Textile Chemistry which along with the Textile Management and Technology curriculum are accredited by the Textile Institute, an international organization headquartered in Great Britain which reviews textile academic programs worldwide. The programs in the Department of Textile Engineering are designed to prepare one for a career in one of the facets of the textile industry.

These curricula are designed to meet the educational requirements of the engineering professions. The program in the fundamental sciences of mathematics, chemistry and physics is followed by a study of basic engineering sciences. Specialized or departmental courses are taken in the third and fourth years. Flexibility is provided in all degree programs through electives so that the individual may emphasize areas of personal interest.

**Others** — The Bachelor of Aviation Management degree (administered by the Aerospace Engineering Department) provides education for management careers with the airlines, general aviation, airports and other industries.

The Bachelor of Science in Forest Engineering is offered jointly by the Agricultural Engineering Department and the School of Forestry. The curriculum combines professional courses in engineering and forestry for students who want careers in forest industries that require training in both engineering and forestry.

**Dual-Degree** — The College of Engineering has agreements with several predominantly liberal arts institutions to offer an academic program where a student can earn two baccalaureate degrees. Under the terms of this program the first three years of study are devoted to earning a major in any one of the disciplines offered by the institution first entered, while completing the basic sciences and mathematics courses required for pre-engineering at Auburn.

Upon completion of three years of study in the liberal arts the student transfers to the College of Engineering. After a minimum of two years of study in an engineering curriculum, the student earns degrees from both institutions. The broad background provided by this program may enable a student to cope more effectively with many of the problems of modern-day society.

Dual degree agreements have also been made with Auburn University's Colleges of Agriculture, Liberal Arts and Sciences and Mathematics, to provide for dual degree programs with the College of Engineering.

**Graduate** — The College of Engineering offers the M.S. and Ph.D. degrees in aerospace, agricultural, chemical, civil, computer science and engineering, electrical, industrial, materials and mechanical engineering. The following professional degrees are offered as well: master of aerospace engineering, master of chemical engineering, master of civil engineering, master of electrical engineering, master of industrial engineering, master of manufacturing systems engineering, master of materials engineering and master of mechanical engineering. The M.S. in textile science is a joint program coordinated through the Department of Textile Engineering and Consumer Affairs. The M.S. requires a minimum of 45 quarter hours, including a formal written thesis and one quarter of full-time residency. A minimum of 45 to 48 quarter hours is required under the professional degree program. Additional requirements vary from program to program. For further information, see the Graduate School Bulletin.

**Cooperative Education** — The Cooperative Education Program is offered in all curricula of the College of Engineering. Refer to the program and write to the Director, Cooperative Education, Auburn University, AL 36849, for a booklet which gives additional information.

**Extension** — The Engineering Extension Service helps to extend the resources of the College of Engineering to the people, businesses and industries of the state. Most of the programs of this expanding service are short courses, conferences, workshops and seminars. For further information, write to the Director, Engineering Extension Service, 107 Ramsay Hall, Auburn University, AL 36849.

**Videotape-Based Off-Campus Courses** — The College of Engineering offers graduate-level courses for credit and non-credit to off-campus students through its Office of Continuing Engineering Education. Graduate-level courses are videotaped in the classroom on the Auburn campus and mailed to off-campus students on the same day. Students enrolled in the program are required to do the same homework assignments and take the same exams as the on-campus students enrolled in the course. For information on admission to the program, fees, course offerings and other particulars, write to the Associate Dean of Engineering for Off-Campus

Instruction, Office of Continuing Engineering Education, 202 Ramsay Hall, Auburn University, AL 36849 or call (205) 844-5300.

## Pre-Engineering

**Scholastic Requirements** — Pre-Engineering students are transferred to the curriculum of their choice in the College of Engineering upon meeting the following requirements:

1. Complete all appropriate freshman courses;  
2. Earn an overall grade point average on all required and approved elective course work as follows: 2.5 for Electrical Engineering; 2.0 for Textile Management and Technology; 2.2 for all other curricula.

3. Recommendation by the Curriculum Admissions Committee.

A student who has not met the above criteria after six resident quarters is dropped from the College of Engineering. Junior standing will not be granted to any student in the Pre-Engineering Program.

**Academic standing** — The College of Engineering's academic standing policy for those students who have completed their pre-engineering requirements and are classified in their engineering curricula is as follows:

1. Engineering students will be placed on engineering academic warning whenever their quarterly grade-point average is less than a 2.0.

2. If — during the next quarter in residence — a student on engineering academic warning does not earn a 2.0 quarterly grade-point average, that student will be placed on engineering academic probation.

3. If — during the next quarter in residence — a student on engineering academic probation does not earn a 2.0 cumulative grade-point average — that student will be automatically withdrawn from the College of Engineering with the notation, "Dropped from College of Engineering" placed on their record.

4. Students who are dropped under the above provisions are eligible for consideration for admission to other curricula outside the College of Engineering, provided they meet the general scholastic requirements for continuance in the university. The student should check with the registrar to determine his or her academic status.

**Degree Requirements** — To earn the bachelor's degree in the College of Engineering students must complete all the subjects in their curriculum, have a minimum grade point average of 2.0 in all work attempted at Auburn University and have a cumulative grade point average of 2.0 on all courses passed in the major at Auburn. The major is defined as all coursework with the departmental prefix in the student's curriculum, that is, for an electrical engineering student, all courses with the EE prefix are considered to be in the major. It is the responsibility of the student to keep informed of course requirements and scheduling. Failure to do so may jeopardize graduation.

**Military Science** — All curricula in the College of Engineering permit the use of some basic and advanced ROTC courses passed at Auburn University. For these options, see the specific curriculum. Twelve ROTC course credits are approved for all engineering curricula by the College of Engineering only for those ROTC students who are enrolled in, and complete a 12-quarter AU ROTC program. For those students who do not complete a 12-quarter AU ROTC program, course credit will be determined on an individual basis. ROTC courses cannot be substituted for any ABET required courses.

The Pre-Engineering curriculum shown below is uniform for Aerospace, Civil, Computer Engineering and Computer Science, Electrical, Industrial, Materials and Mechanical Engineering. Chemical and Textile Engineering have separate freshman year requirements.

### Curriculum in Pre-Engineering (PN)

FRESHMAN YEAR		
First Quarter		
MH 161 An. Geom. & Cal. ....	5	
CH 103 Fund. Chem. I ....	4	
CH 103L Gen. Chem. Lab. ....	1	
CSE 120 Intro. Engr. Comp. ....	3	
Core/History** .....	3	
Second Quarter		
MH 162 An. Geom. & Cal. ....	5	
CH 104 Fund. Chem. II ....	4	
CH 104L Gen. Chem. Lab. ....	1	
EH 110 Eng. Comp.** .....	5	
Core/History** .....	3	
Third Quarter		
MH 163 An. Geom. & Cal. ....	5	
PS 220 Gen. Physics I ....	3	
PS 220L Gen. Physics Lab. I ...	1	
PA 102 .....	5	
Core/History** .....	3	

\*\*For University Core options to satisfy these requirements, see page 39.

## Department of Aerospace Engineering

The Aerospace Engineering curriculum provides a background for students entering many areas of today's scientific and technological fields. The first two years are devoted to the basic subjects of mathematics and physical sciences. The last two years deal with such areas as aerodynamics, design, astrodynamics, propulsion, structures and flight dynamics. In support of these areas, courses in advanced mathematics, computer programming (both digital and analog) and systems analysis are offered. The methods of systematic problem analysis are stressed. The theory taught in classroom lectures is experimentally verified in laboratory sessions. During the senior year students may take technical electives in several fields of specialization. The curriculum also serves as a background for graduate study and research.

## Curriculum In Aerospace Engineering (AE)

## FRESHMAN YEAR

(See Pre-Engineering Curriculum)

## SOPHOMORE YEAR

## First Quarter

MH	264 An. Geom. & Calc.	5
EGR	205 App. Mech. Stat.	3
PS	221 Gen. Physics II	3
PS	221L Gen. Phys. Lab. II	1
U	101 Soc. & Cult.	3
	Free Elective*	3

## Second Quarter

ME	235 Dynamics I	3
PS	222 Gen. Physics III	3
PS	222L Gen. Physics Lab III	1
MH	265 Lin. Diff. Equat.	3
U	102 Polit. Econ.	3
EH	220 Great Books I	5

## Third Quarter

EE	302 Intr. to EE I	3
EGR	201 Thermodynamics	3
AE	310 Aerosp. Anal.	3
EGR	207 Strength of Mtl.	3
U	103 Indiv. in Soc.	3
	Free Elective*	3

## JUNIOR YEAR

AE	307 Aerosp. Struct. I	5
AE	311 Aerosp. Matls.	3
AE	326 Fund. Aerosp. Dyn.	3
ME	340 Fluid Mech. I	3
	Free Elective***	3

AE	302 Airloads	4
AE	303 Theo. Aerosp. I	5
AE	334 Aerosp. Syst. Anal.	3
EH	221 Great Books II	5

AE	339 Stat. Stab. & Cntl.	4
AE	304 Theo. Aerosp. II	4
AE	305 Flight Perf.	3
AE	332 Aerodynamics I	3
EH	404 Tech. Writ.	5

## SENIOR YEAR

AE	409 Aerosp. Struct. II	5
AE	415 Jet Propulsion	5
AE	447 Aerosp. Design I	2
	Tech. Elective	6

AE	541 Dyn. Stab. & Cntl.	3
AE	521 Flight Veh. Stress Anal.	3
AE	533 Aerodynamics II	3
PS	320 Mod. Physics	3
AE	448 Aerosp. Design II	2
	Tech. Elective**	3

AE	529 Vibration & Flutter	4
AE	400 Viscous Aerosp.	3
AE	449 Aerosp. Des. III	2
	Tech. Elective	5
	Core/Fine Arts**	3

## TOTAL — 210 QUARTER HOURS

\* Six hours of basic ROTC may be substituted for six hours of Free Elective.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Six hours of advanced ROTC for three free hours and three hours of technical electives.

## Aviation Management

The Aviation Management curriculum provides the graduate with a technical management background with specialization in aviation leading to careers with the airlines, aircraft manufacturers and airports as well as many other segments of the aviation industry. Information regarding awards, scholarships, internships and aviation management student organizations is available through the Program Coordinator.

## ALTERNATIVE AREAS OF CONCENTRATED STUDY

There are other major fields of concentration within the basic program. These are Professional Flight Management, Airway Science Management and Management in Aircraft System. Descriptions follow:

## PROFESSIONAL FLIGHT MANAGEMENT (AMF)

Requires flight education and training through either Certificated Flight Instructor rating or Multi-Engineer rating. The major develops competence in flight in preparation for a flight operation career with the airlines; a corporation flight department; a flight instructor. Special fee required for the flight training courses.

## AIRWAY SCIENCE MANAGEMENT (AMA)

Follows an approved selection of professional electives prescribed by the Federal Aviation Administration for a career in air traffic control.

## AIRCRAFT SYSTEMS MANAGEMENT (AMS)

Established and approved by the Federal Aviation Administration to provide for a career as a Flight Safety Inspector. Special fees required for flight training courses.

Those individuals who are interested in registering in any of the foregoing major fields are advised to contact the Program Coordinator, Aviation Management in the Department of Aerospace Engineering as soon as that decision is made so proper counseling and classification can be provided.

## Curriculum in Basic Aviation Management (AMN)

## FRESHMAN YEAR

## First Quarter

MH	180 Pre-Calculus	5
EH	110 Eng. Comp.	5
HY	121 Tech. & Civ.	3
AM	101 Intr. to Aviation	3

## Second Quarter

MH	161 Anal. Calculus	5
PA	219 Bus. Ethics	5
HY	122 Tech. & Civ.	3
COM	100 Speech	3

## Third Quarter

AM	200 Aerosp. Prob.	3
PG	211 Psychology	5
HY	123 Tech. & Civ.	3
U	101 Soc. & Cult.	3

## SOPHOMORE YEAR

AM	201 Elem. Aerosp.	3
AM	207 Intr. Comp.	3
PS	205 Phys. I & Lab	4
MT	255 Leg. Envir. Bus.	4
U	102 Polit. Econ.	3

AM	220 Statistics	3
PS	206 Phys. II & Lab	4
EH	220 Great Books I	5
	Core/Fine Arts**	3
U	103 Indiv. in Soc.	3

PS	207 Phys. III & Lab	4
AC	215 Fund. Acct.	5
EH	221 Great Books II	5



## College of Engineering

### JUNIOR YEAR

EC 301 Econ. Prin. ....	5	AM 309 Prop. & Sys. I ....	4	AM 310 Prop. & Sys. II ....	4
AM 305 Aviation Met. ....	5	AM 320 Econ. Anal. ....	5	AM 314 Oper. Prob. ....	5
MN 310 Prin. Mgt. ....	5	FI 361 Prin. Finance ....	5	EHA 404 Tech. Writing ....	5
AM 405 Aviation Safety ....	3	MN 342 Hum. Res. Mgt. ....	5	AM 416 Air. Transp. I ....	3

### SENIOR YEAR

MT 331 Prin. Mkt. ....	5	PG 561 Indus. Phy. ....	5	AM 401 Aerosp. Seminar ....	1
AM 403 Gen. Av. Mgt. ....	3	AM 417L Simulation ....	2	AM 409 Aerosp. Law & Ins. ....	3
AM 417 Air Transp. II ....	3	Prof. Elective ....	3	AM 443 Labor Relations ....	5
MT 372 Prin. Transp. ....	5	AM 413 Airport Mgt. ....	3	Prof. Elective ....	7

### TOTAL — 194 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Professional Electives must be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours) basic ROTC may be used in lieu of six hours of Professional Electives.

## Curriculum in Professional Flight (AMF)

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 160 Pre-Calculus ....	5	MH 161 Anal. Calculus ....	5	AM 200 Aerosp. Prob. ....	3
EH 110 Eng. Comp. ....	5	PA 219 Bus. Ethics ....	5	PG 211 Psychology ....	5
HY 121 Tech. & Civ. ....	3	HY 122 Tech. & Civ. ....	3	HY 123 Tech. & Civ. ....	3
AM 101 Intr. to Aviation ....	3	COM 100 Speech ....	3	U 101 Soc. & Cult. ....	3
				AM 215 Prin. of Flight I ....	3

### SOPHOMORE YEAR

AM 207 Intr. Comp. ....	3	AM 220 Statistics ....	3	MT 255 Leg. Environ. Bus. ....	4
AM 216 Prin. of Flight II ....	3	PS 206 Phy. II & Lab ....	4	AC 215 Fund. Acct. ....	5
PS 205 Phy. I & Lab ....	4	EH 220 Great Books I ....	5	EH 221 Great Books II ....	5
AM 217 Pvt. Flt. Trng. I ....	1	AM 218 Pvt. Flt. Trng. II ....	1	AM 322 Comm. Flt. Trng. I ....	1
U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3		
Core/Fine Arts** ....	3				

### JUNIOR YEAR

EHA 404 Tech. Writing ....	5	AM 309 Prop. & Sys. I ....	4	AM 310 Prop. & Sys. II ....	4
AM 323 Comm. Ops. & Perf. ....	4	AM 320 Econ. Anal. ....	5	AM 314 Oper. Prob. ....	5
AM 324 Comm. Flt. Trng. II ....	1	AM 325 Prin. Inst. Flt. ....	5	AM 416 Air Transp. I ....	3
MN 310 Prin. Mgt. ....	5	AM 326 Comm. Flt. Trng. III ....	1	AM 327 Comm. Flt. Trng. IV ....	1
AM 405 Aviation Safety ....	3			AM 428 Prin. Flt. Instr. ....	3

### SENIOR YEAR

AM 403 Gen. Av. Mgt. ....	3	AM 413 Airport Mgt. ....	3	AM 401 Aerosp. Seminar ....	1
AM 417 Air Transp. II ....	3	PG 561 Indus. Psych. ....	5	AM 409 Aerosp. Law & Ins. ....	3
FI 361 Prin. Finance ....	5	AM 417L Simulation ....	2	MN 443 Labor Relations ....	5
AM 429 Flt. Instr. Trng. ....	1	MN 342 Hum. Res. Mgt. ....	5	Prof. Elective ....	6
EC 301 Econ. Prin. ....	5	Prof. Elective ....	3		

### TOTAL — 196 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

All Professional Electives must be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours) basic ROTC may be used in lieu of six hours of Professional Electives.

## Curriculum in Airway Science (AMA)

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 160 Pre-Calculus ....	5	MH 161 Anal. Calculus ....	5	AM 200 Aerosp. Prob. ....	3
EH 110 Eng. Comp. ....	5	PA 219 Bus. Ethics ....	5	PG 211 Psychology ....	5
HY 121 Tech. & Civ. ....	3	HY 122 Tech. & Civ. ....	3	HY 123 Tech. & Civ. ....	3
AM 101 Intr. to Aviation ....	3	COM 100 Speech ....	3	U 101 Soc. & Cult. ....	3

### SOPHOMORE YEAR

AM 201 Elem. Aerosp. ....	3	AM 220 Statistics ....	3	PS 207 Phy. III & Lab ....	4
AM 207 Basic Prog. ....	3	PS 206 Phy. II & Lab ....	4	AC 215 Fund. Acct. ....	5
PS 205 Phy. I & Lab ....	4	EH 220 Great Books I ....	5	EH 221 Great Books II ....	5
MT 255 Leg. Envir. Bus. ....	4	U 103 Indiv. in Soc. ....	3	Core/Fine Arts** ....	3
U 102 Polit. Econ. ....	3				

### JUNIOR YEAR

EC 301 Econ. Prin. ....	5	AM 309 Prop. & Sys. I ....	4	AM 310 Prop. & Sys. II ....	4
AM 305 Aviation Met. ....	5	AM 320 Econ. Anal. ....	5	AM 314 Oper. Prob. ....	5
MN 310 Prin. Mgt. ....	5	EHA 404 Tech. Writing ....	5	MT 331 Prin. Mkt. ....	5
AM 405 Aviation Safety ....	3			AM 416 Air. Transp. I ....	3

## College of Engineering

### SENIOR YEAR

MT 342 Hum Res. Mgt. .... 5	PG 561 Indus. Phy. .... 5	AM 401 Aerosp. Seminar ..... 1
AM 403 Gen. Av. Mgt. .... 3	AM 417L Simulation ..... 2	AM 409 Aerosp. Law & Ins. .... 3
AM 417 Air Transp. II ..... 3	Prof. Elective ..... 5	AM 443 Labor Relations ..... 5
Prof. Elective ..... 5	AM 413 Airport Mgt. .... 3	Prof. Elective ..... 3
	MN 346 Org. Behavior ..... 5	AM 419 Air Tlc. Cont. .... 5

### TOTAL — 195 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Professional Electives may be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours) basic ROTC may be used in lieu of six hours of Professional Electives.

## Curriculum in Aircraft Systems (AMS)

### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH	160 Pre-Calculus .....	5	MH	161 Anal. Calculus .....	5	AM	200 Aerosp. Prob. ....	3
EH	110 Eng. Comp. ....	5	PA	219 Bus. Ethics .....	5	PG	211 Psychology .....	5
HY	121 Tech. & Civ. ....	3	HY	122 Tech. & Civ. ....	3	HY	123 Tech. & Civ. ....	3
AM	101 Intr. to Aviation .....	3	COM	100 Speech .....	3	U	101 Soc. & Cult. ....	3
						AM	215 Prin. of Flt. I .....	3

### SOPHOMORE YEAR

AM 216 Prin. of Flt. II. .... 3	AM 220 Statistics ..... 3	PS 207 Phy. III & Lab ..... 4
AM 207 Intr. Comp. .... 3	PS 206 Phy. II & Lab ..... 4	AC 215 Fund. Acct. .... 5
PS 205 Phy. I & Lab ..... 4	EH 220 Great Books I ..... 5	EH 221 Great Books II ..... 5
MT 255 Leg. Envir. Bus. .... 4	AM 217 Priv. Flt. Trng. II ..... 1	AM 322 Com. Flt. Trng. I ..... 1
U 102 Polit. Econ. .... 3	U 103 Indiv. in Soc. .... 3	
AM 217 Priv. Flt. Trng. I ..... 1		

### JUNIOR YEAR

EHA 404 Tech. Writing ..... 6	AM 309 Prop. & Sys. I ..... 4	AM 310 Prop. & Sys. II ..... 4
AM 323 Com. Ops. & Perf. .... 4	AM 320 Econ. Anal. .... 5	AM 314 Oper. Prob. .... 5
MN 310 Prin. Mgt. .... 5	AM 325 Prin. of Inst. Flt. .... 5	AM 327 Comm. Flt. Trng. IV ..... 1
AM 405 Aviation Safety ..... 3	AM 326 Comm. Flt. Trng. III ..... 1	AM 416 Air. Transp. I ..... 3
AM 324 Comm. Flt. Trng. II ..... 1		AM 428 Prin. Flt. Instr. .... 3

### SENIOR YEAR

EC 301 Econ. Prin. .... 5	PG 561 Indus. Phy. .... 5	AM 401 Aerosp. Seminar ..... 1
AM 403 Gen. Av. Mgt. .... 3	AM 417L Simulation ..... 2	AM 409 Aerosp. Law & Ins. .... 3
AM 417 Air Transp. II ..... 3	AM 435 Inst. Flt. Instr. Trng. .... 2	AM 443 Labor Relations ..... 5
FI 361 Prin. Finance ..... 5	AM 413 Airport Mgt. .... 3	Prof. Elective ..... 6
AM 429 Flt. Instr. Trng. .... 1	Core/Fine Arts** ..... 3	AM 437 Multi-Engine Instr. .... 2
AM 427 Multi-Engine Trng. .... 2		

### TOTAL — 198 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Professional Electives may be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours) basic ROTC may be used in lieu of six hours of Professional Electives.

### SUGGESTED PROFESSIONAL ELECTIVES COURSES OTHER THAN THOSE LISTED BELOW MAY BE USED

#### AS PROFESSIONAL ELECTIVES ONLY UPON APPROVAL BY THE PROGRAM COORDINATOR

AVIATION MANAGEMENT: All Except AM 304. COMMUNICATION: COM 311, 340, 480. ECONOMICS: EC 340, 350, 433, All 500-level courses. ENGLISH: EHA 400, 416. HISTORY: HY 307, 308, 309. MANAGEMENT: MN 305, 307, 380, 381, 382, 385, 386, 410, 420, 421. All 500-level courses. MARKETING: MT 344, 336, 341, 372, 432, 436, 440, 474, 475, 476, 477. CIVIL ENGINEERING: CE 201, 350, 450, 452, 542, 556. ACCOUNTING: AC 213, All 300-level, 410. FINANCE: FI 320, 323, 362, 363, 421, 451. GEOGRAPHY: GY 102, 302, 401, 507.

## Department of Agricultural Engineering

The Agricultural Engineering Department offers programs in Agricultural Engineering and in Forest Engineering.

The Agricultural Engineering curriculum provides the graduate with engineering skills necessary to serve the nation's largest industry - agriculture. In addition to a strong background in mathematics, physical sciences and basic engineering fundamentals, the student of agricultural engineering receives training in biological and agricultural sciences. Through technical electives in the senior year, one can specialize in one or more areas to include soil and water conservation, power and machinery design, electric power and processing, agricultural structures and environment, food engineering and waste management and agricultural pollution control.

The curriculum is coordinated by the colleges of Engineering and Agriculture. Students register in Engineering and are assigned an academic advisor in Agricultural Engineering. Beginning students should apply for admission to the College of Engineering and complete the Pre-Agricultural Engineering program. For qualified agricultural students who develop an interest in Agricultural Engineering during their freshman year, an alternate course sequence for

completion of the Pre-Agricultural Engineering program under the guidance of an Agricultural Engineering advisor is available in the College of Agriculture.

### Curriculum In Agricultural Engineering (AN)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 161 An. Geom. & Calc. .... 5	MH 162 An. Geom. & Calc. .... 5	MH 163 An. Geom. & Calc. .... 5
CH 103 Fund. Chem. I ..... 4	CH 104 Fund. Chem. II ..... 4	PS 220 Gen. Phys. I ..... 3
CH 103L Gen. Chem. Lab ..... 1	CH 104L Gen. Chem. Lab ..... 1	PS 220L Gen. Phys. Lab I ..... 1
CSE 120 Intr. Engr. Comp. .... 3	EH 110 Eng. Comp. .... 5	PA 102 or 219 Ethics ..... 5
HY 121 Tech. & Civ. I* ..... 3	HY 122 Tech. & Civ. II* ..... 3	HY 123 Tech. & Civ. III* ..... 3
ROTC or Free Elective ..... 1	ROTC or Elective ..... 1	ROTC or Elective ..... 1
SOPHOMORE YEAR		
MH 264 An. Geom. & Calc. .... 5	MH 265 Diff. Equations ..... 3	EE 330 An. & Des. Log. Cir. .... 4
PS 221 Gen. Phys. II ..... 3	PS 222 Gen. Phys. III ..... 3	EGR 201 Thermodynamics I ..... 3
PS 221L Gen. Phys. Lab II ..... 1	PS 222L Gen. Phys. Lab III ..... 1	EGR 235 Dynamics I ..... 3
AN 201 Engr. Prin. Bio. Syst. .... 5	EGR 207 Mech. of Solids ..... 3	EH 220 Great Books I ..... 5
EGR 205 Engr. Mech. Stat. .... 3	BI 101 Prin. Biol. .... 5	Core/Fine Arts** ..... 3
ROTC or Free Elective ..... 1	ROTC or Elective ..... 1	ROTC or Elective ..... 1
JUNIOR YEAR		
CE 310 Hydraulics I ..... 3	AN 311 Mob. Eqpt. Des. Fnd. .... 4	AN 313 L&W Con. Engr. .... 3
EE Intr. EE I ..... 3	AN 315 Proc. Engr. Biol. Sys. .... 5	AN 316 Elec. Syst. in Ag. .... 4
AY 307 Gen. Soils ..... 5	EE 303 Intr. EE II ..... 3	AN 317 Env. Cntl. Bio. Sys. .... 3
EH 221 Great Books II ..... 5	EHA 404 Tech. Writing ..... 5	AEC 202 Ag. Econ. II ..... 5
		Tech. Elective ..... 4
SENIOR YEAR		
AN 403 App. Strct. An. & Des. .... 3	AN 430 Engr. Bio. Sys. I ..... 4	AN 530 Engr. Bio. Sys. II ..... 4
AN 414 Irrigation Syst. Des. .... 3	IE 360 Engr. Econ. Anal. .... 3	Anim/Plant Sci. Elect. .... 4
AN 418 Waste Mgt. Util. Sys. .... 4	Anim/Plant Sci. Elective ..... 6	Tech. Elective ..... 5
AN 509 Hydraulic Cntl. Syst. .... 3	U 102 Polk Econ. .... 3	U 103 Indiv. in Soc. .... 3
U 101 Soc. & Cult. .... 3		

TOTAL — 207 QUARTER HOURS

\*HY 101, 102, 103 may be substituted.

\*\*For University Core options to satisfy these requirements, see page 39.

Six hours of advanced ROTC may be substituted for six hours of technical electives.

### Forest Engineering

Forest Engineering is a multi-disciplinary science dealing with two of our most important natural resources — timber and land — and mechanical devices and processes for their efficient utilization. Forest engineers are professionally trained to apply engineering and forestry principles to solve operations problems in regenerating, growing, harvesting, handling, transporting and processing timber. In addition, they also deal with the engineering problems related to other forest resources.

The curriculum is coordinated by the College of Engineering and the School of Forestry. Students register in the College of Engineering and are assigned academic advisors in Agricultural Engineering and in Forestry. Beginning students should apply to the College of Engineering and complete the Pre-Forest Engineering program. For qualified forestry students who develop an interest in Forest Engineering during their freshman year, an alternate course sequence for completion of the Pre-Forest Engineering program under the guidance of an Agricultural Engineering and a Forestry advisor is available in the School of Forestry.

The Forest Engineering curriculum is accredited as a professional forestry program by the Society of American Foresters and is designed also to meet accreditation requirements of the Accreditation Board for Engineering and Technology.

### Curriculum In Forest Engineering (FYE)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 161 An. Geom. & Calc. .... 5	MH 162 An. Geom. & Calc. .... 5	MH 163 An. Geom. & Calc. .... 5
CH 103 Fund. Chem. I ..... 4	Core/Fine Arts** ..... 3	PS 220 Gen. Phys. I ..... 3
CH 103L Gen. Chem. Lab ..... 1	EH 110 Eng. Comp. .... 5	PS 220L Gen. Phys. Lab I ..... 1
CSE 120 Intr. Engr. Comp. .... 3	HY 122 Tech. & Civ. II* ..... 3	PA 102 or 219 Ethics ..... 5
HY 121 Tech. & Civ. I* ..... 3	ROTC or Elective ..... 1	HY 123 Tech. & Civ. III* ..... 3
ROTC or Free Elective ..... 1	ROTC or Elective ..... 1	ROTC or Elective ..... 1
SOPHOMORE YEAR		
MH 264 An. Geom. & Calc. .... 5	MH 265 Diff. Equations ..... 3	BI 101 Prin. Biol. .... 5
PS 221 Gen. Phys. II ..... 3	PS 222 Gen. Phys. III ..... 3	EGR 201 Thermodynamics I ..... 3
PS 221L Gen. Phys. Lab II ..... 1	PS 222L Gen. Phys. Lab III ..... 1	EGR 235 Dynamics I ..... 3
FYE 201 Engr. Prin. Bio. Syst. .... 5	EGR 207 Mech. of Solids ..... 3	EH 221 Great Books II ..... 5
EGR 205 Engr. Mech. Stat. .... 3	EH 220 Great Books I ..... 5	ROTC or Free Elective ..... 1
ROTC or Free Elective ..... 1	ROTC or Free Elective ..... 1	

# College of Engineering

## SUMMER CAMP

FYE	300 Intr. Forest Oper.	2
FY	302 Intr. Forest Biol.	2
FYE	304 Forest Surveying	5
FY	305 Field Mensuration	4
FY	306 Intr. Forest Mgt.	2

## JUNIOR YEAR

EE	302 Intr. to EE I	3	FYE	311 Mob. Eqp. Des. Fund.	4	FYE	401 For. Mach. Des.	3
IE	430 Engr. Stat.	5	CE	430 Intr. Soil Mech.	4	FYE	313 L&W Cons. Engr.	3
CE	310 Hydraulics I	3	FY	318 Forest Meas. I	4	FY	319 For. Meas. II	5
U	101 Soc. & Cult.	3	FYE	315 Proc. Engr. For. Sys.	5	EHA	404 Tech. Writing	5
FY	310 Dendrology	4						

## SENIOR YEAR

FYE	403 App. Struct. An. & Des.	3	FYE	430 Egr. Des. I	4	FYE	530 Egr. Des. II	4
FYE	402 For. Tran. Sys. Des.	3		Egr. Elective	4	FYE	572 Egr. Des. F.H.S.	4
FYE	509 Hydraulic Cntrl. Sys.	3		Tech. Elective	3	U	103 Indiv. in Soc.	3
FY	540 Forest Economics	4	U	102 Polit Econ.	3		Tech. Elective	3

## TOTAL — 210 QUARTER HOURS

\*HY 101, 102, 103 may be substituted.

\*\*For University Core options to satisfy these requirements, see page 39.

Six hours of advanced ROTC may be substituted for six hours of technical electives.

**STUDENTS MAY OBTAIN A MINOR IN FOREST RESOURCES BY TAKING THE FOLLOWING ADDITIONAL COURSES:** (Up to 12 hours toward minor may be taken for technical or free electives in FYE curriculum.) BI 102, FY 323, 523, 541, 543, ENT/PLP 215 or FY 444, FY 463 or ZY 205.

**TOTAL ADDITIONAL HOURS REQUIRED FOR MINOR: 23-25**

**TOTAL COMBINE HOURS: 221-236**

## Department of Chemical Engineering

The program leading to the bachelor's degree in chemical engineering consists largely of the study of broad scientific and engineering principles which have numerous applications in the chemical and related industries. In order to assist those students wishing to pursue special interests, options are offered in Biochemical Engineering, Computer Control, Energy, Environmental Chemical Engineering, Pre-Medicine, and Pulp and Paper Engineering.

The broad university education provided, when supplemented by professional experience, enables graduates to qualify as engineers in production, research and development, sales engineering, plant design and management in the chemical industry and in a wide range of related industries — petroleum, plastics, metals, paper, pharmaceuticals and many others. Those students who elect to continue their education through one or more advanced degrees are qualified for better positions and often make more rapid progress than those with just the bachelor's degree.

## Curriculum in Chemical Engineering (CHE)

### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	111 Gen. Chem. I	5	CH	112 Gen. Chem. I	5	CH	113 Gen. Chem. I	5
MH	161 An. Geom. & Calc.	5	MH	162 An. Geom. & Calc.	5	MH	163 An. Geom. & Calc.	5
CHE	101 Intr. CHE	1	EH	101 Eng. Comp.	5	CHE	213 Comp. in CHE	3
	Core/History**	3	CHE	102 Intr. CHE II	1		Core/History**	3
U	101 Soc. & Cult.	3						

### SOPHOMORE YEAR

CHE	210 Mass Balances	3	CHE	211 Energy Balances	4	EGR	201 Thermo. I	3
MH	264 An. Geom. & Calc.	5	EH	220 Great Books I	5	CHE	361 Transport I	4
PS	220 Gen. Physics	5	PS	221 Gen. Physics	4	CH	207 Org. Chem.	5
	Core/History**	3	MH	265 Diff. Equations	3	EH	221 Great Books II	5
U	102 Polit Econ.	3	COM	100 Prof. Comm.	3			

### JUNIOR YEAR

CHE	515 Comp. App. CHE	3	CHE	363 Transport III	4	CHE	367 Unit Oper. II	3
CHE	337 Thermo. II	4	CHE	366 Unit Oper. I	3	CHE	370 Reaction Engr.	4
CHE	362 Transport II	4	CHE	382 CHE Lab I	3	CHE	486 CHE Lab II	3
CH	208 Organic Chem.	5	CH	507 Phys. Chem.	5	EE	302 Intr. EE I*	3
U	103 Indiv. in Soc.	3	CHE	365 CHE Analysis	3	CH	508 Physical Chem.	5

# College of Engineering

## SENIOR YEAR

CH	Adv. Chem. Elect.*	4	CHE	517 Dig. Proc. Cont.	4	CHE	447 Comp. Proc. Des.	3
CHE	516 Proc. Dyn. & Cont.	4	CHE	546 Comp. Proc. Sim.	4	CHE	Sci./Des. Elective**	3
CHE	444 Proc. Des. Pract.	2	CHE	518 Proc. Dyn. & Cnt. Lab	2	CHE	585 Hazard Mat. Mgt.	4
CHE	545 Proc. Econ. & Des.	3	EHA	404 Tech. Writing	5		Core/Fine Arts**	3
	Engr. Sci. Elect.**	3		Free Elect. or Adv. ROTC	3	PA	219 Bus. Ethics	5

## TOTAL — 204 QUARTER HOURS

\* CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHE.

\* One course selected from CH 209, 509, 510, 513, 518, FP 478.

\* Three hours selected from EE 301, 303, IE 331, EGR 205, MTL 220.

\* Three hours selected from CHE 479, 487, 499, 501, 550, 512, 595.

\* May be replaced by EE 261.

\* May be replaced by basic ROTC.

\*\* For University Core options to satisfy these requirements, see page 39.

## Biochemical Engineering Option

### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	111 Gen. Chem. <sup>1</sup>	5	CH	112 Gen. Chem. <sup>1</sup>	5	CH	113 Gen. Chem. <sup>1</sup>	5
MH	161 An. Geom. & Cal.	5	MH	162 An. Geom. & Cal.	5	MH	163 An. Geom. & Cal.	5
CHE	101 Intr. CHE I	1	EH	110 Eng. Comp.	5	CHE	213 Comp. In CHE	3
	Core/History**	3	CHE	102 Intr. CHE II	1		Core/History**	3
U	101 Soc. & Cult.	3						

### SOPHOMORE YEAR

CHE	210 Mass Balances	3	CHE	211 Energy Balances	4	EGR	201 Thermo. I	3
MH	264 An. Geom. & Cal.	5	EH	220 Great Books I	5	CHE	361 Transport I	4
PS	220 Gen. Phys.	4	PS	221 Gen. Phys.	4	CH	207 Organic Chem.	5
	Core/History**	3	MH	265 Diff. Equation	3	EH	221 Great Books II	5
U	102 Polit. Econ.	3	COM	100 Prof. Comm.	3			

### JUNIOR YEAR

MB	300 Microbiology	5	CHE	363 Transport II	4	CHE	367 Unit Oper. II	3
CHE	337 Thermo. II	4	CHE	366 Unit Oper. I	3	CHE	370 Reaction Engr.	4
CHE	362 Transport II	4	CHE	382 CHE Lab I	3	CHE	486 CHE Lab II	3
CH	208 Organic Chem.	5	CH	507 Phys. Chem.	5	EE	302 Intr. EE I <sup>2</sup>	3
			CHE	365 CHE Analysis	3	CH	508 Phys. Chem.	5

### SENIOR YEAR

CH	518 Biochemistry	4	CHE	517 Dig. Proc. Cont.	4	CHE	447 Comp. Proc. Des.	3
CHE	516 Proc. Dyn. & Cont.	4	CHE	546 Comp. Proc. Sim.	4	CHE	Sci./Des. Elective*	3
CHE	444 Proc. Des. Pract.	2	CHE	518 Proc. Dyn. & Cnt. Lab	2	CHE	595 Biochem. Engr.	3
CHE	545 Proc. Econ. & Des.	3	EHA	404 Tech. Writing	5		Core/Fine Arts**	3
U	103 Indiv. In Soc.	3		Free Elective	3	PA	219 Bus. Ethics	5

## TOTAL — 210 QUARTER HOURS

\* CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHE.

\* Four hours selected from CHE 479, 487, 490, 499, 501, 550, 512, 515, 565.

\* May be replaced by EE 261.

\*\* For University Core options to satisfy these requirements, see page 39.

## Computer Control Option

### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	111 Gen. Chem. <sup>1</sup>	5	CH	112 Gen. Chem. <sup>1</sup>	5	CH	113 Gen. Chem. <sup>1</sup>	5
MH	161 An. Geom. & Cal.	5	MH	162 An. Geom. & Cal.	5	MH	163 An. Geom. & Cal.	5
CHE	101 Intr. CHE I	1	EH	110 Eng. Comp.	5	CHE	213 Comp. In CHE	3
	Core/History**	3	CHE	102 Intr. CHE II	1		Core/History**	3
U	101 Soc. & Cult.	3						

### SOPHOMORE YEAR

CHE	210 Mass Balances	3	CHE	211 Energy Balances	4	EGR	201 Thermo. I	3
MH	264 An. Geom. & Cal.	5	EH	220 Great Books I	5	CHE	361 Transport I	4
PS	220 Gen. Phys.	4	PS	221 Gen. Phys.	4	CH	207 Organic Chem.	5
	Core/History**	3	MH	265 Diff. Equation	3	EH	221 Great Books II	5
U	102 Polit. Econ.	3	COM	100 Prof. Comm.	3			

### JUNIOR YEAR

CHE	515 Comp. App. CHE	3	CHE	363 Transport III	4	CHE	367 Unit Oper. II	3
CHE	337 Thermo. II	4	CHE	366 Unit Oper. I	3	CHE	370 Reaction Engr.	4
CHE	362 Transport II	4	CHE	382 CHE Lab I	3	CHE	486 CHE Lab II	3
CHE	208 Organic Chem.	5	CH	507 Phys. Chem.	5	CH	508 Physical Chem.	5
			CHE	365 CHE Analysis	3	U	103 Indiv. In Soc.	3



# College of Engineering

## SENIOR YEAR

EE 302 Intr. to EE I <sup>1</sup> .....	3	CHE 517 Dig. Proc. Cont. ....	4	CHE 447 Comp. Proc. Des. ....	3
CHE 516 Proc. Dyn. & Cont. ....	4	CHE 548 Comp. Proc. Sim. ....	4	CHE CHE Sci/Des. El. I <sup>2</sup> .....	4
CHE 444 Proc. Des. Pract. ....	2	CHE 518 Proc. Dyn. & Ct. Lab ..	2	CHE 519 Adv. Top. Cont. ....	4
CHE 545 Proc. Econ. & Des. ....	3	EHA 404 Tech. Writing .....	5	Core/Fine Arts ** .....	3
CH 513 Analytical Chem. ....	5	Free Elective .....	4	PA 219 Bus. Ethics .....	5

## TOTAL — 210 QUARTER HOURS

<sup>1</sup> CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHE.

<sup>2</sup> Four hours selected from CHE 479, 487, 490, 499, 501, 550, 512, 515, 565.

<sup>3</sup> May be replaced by EE 261.

\*\* For University Core options to satisfy these requirements, see page 39.

## Energy and Fuels Engineering Option

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 111 Gen. Chem. I <sup>1</sup> .....	5	CH 112 Gen. Chem. I <sup>1</sup> .....	5	CH 113 Gen. Chem. I <sup>1</sup> .....	5
MH 161 An. Geom. & Cal. ....	5	MH 162 An. Geom. & Cal. ....	5	MH 163 An. Geom. & Cal. ....	5
CHE 101 Intr. CHE I .....	1	EH 110 Eng. Comp. ....	5	CHE 213 Comp. In CHE .....	3
Core/History ** .....	3	CHE 102 Intr. CHE II .....	1	Core/History ** .....	3
U 101 Soc. & Cult. ....	3				

### SOPHOMORE YEAR

CHE 210 Mass Balances .....	3	CHE 211 Energy Balances .....	4	EGR 201 Thermo. I .....	3
MH 264 An. Geom. & Cal. ....	5	EH 220 Great Books I .....	5	CHE 361 Transport I .....	4
PS 220 Gen. Phys. ....	4	PS 221 Gen. Phys. ....	4	CH 207 Organic Chem. ....	5
Core/History ** .....	3	MH 265 Diff. Equation .....	3	EH 221 Great Books II .....	5
U 102 Polit. Econ. ....	3	COM 100 Prof. Comm. ....	3		

### JUNIOR YEAR

CHE 515 Comp. App. CHE .....	3	CHE 363 Transport III .....	4	CHE 367 Unit Oper. II .....	3
CHE 337 Thermo. II .....	4	CHE 366 Unit Oper. I .....	3	CHE 370 Reaction Engr. ....	4
CHE 362 Transport II .....	4	CHE 382 CHE Lab I .....	3	CHE 486 CHE Lab II .....	3
CH 208 Organic Chem. ....	5	CH 507 Phys. Chem. ....	5	EE 302 Intr. EE I <sup>1</sup> .....	3
U 103 Indiv. In Soc. ....	3	CHE 365 CHE Analysis .....	3	CH 208 Physical Chem. ....	5

### SENIOR YEAR

CH 513 Analytical Chem. ....	5	CHE 517 Dig. Proc. Cont. ....	4	CHE 447 Comp. Proc. Des. ....	3
CHE 516 Proc. Dyn. & Cont. ....	4	CHE 548 Comp. Proc. Sim. ....	4	Energy/Fuel Elect. I <sup>2</sup> .....	3
CHE 444 Proc. Des. Pract. ....	2	CHE 518 Proc. Dyn. & Cnt. Lab ..	2	CHE 512 Surf. Col. Sci. ....	3
CHE 545 Proc. Econ. & Des. ....	3	EHA 404 Tech. Writing .....	5	Core/Fine Arts ** .....	3
Energy/Fuel Elect. I <sup>2</sup> .....	3	Free Elective .....	3	PA 219 Bus. Ethics .....	5

## TOTAL — 210 QUARTER HOURS

<sup>1</sup> CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHE.

<sup>2</sup> Six hours selected from PS 525, ME 510, 524, 525, 684, GL 110, 641, EE 385, BS 361, CHE 401, 402.

<sup>3</sup> May be replaced by EE 261.

\*\* For University Core options to satisfy these requirements, see page 39.

## Environmental Engineering Option

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 111 Gen. Chem. I <sup>1</sup> .....	5	CH 112 Gen. Chem. I <sup>1</sup> .....	5	CH 113 Gen. Chem. I <sup>1</sup> .....	5
MH 161 An. Geom. & Cal. ....	5	MH 162 An. Geom. & Cal. ....	5	MH 163 An. Geom. & Cal. ....	5
CHE 101 Intr. CHE I .....	1	EH 110 Eng. Comp. ....	5	CHE 213 Comp. In CHE .....	3
Core/History ** .....	3	CHE 102 Intr. CHE II .....	1	Core/History ** .....	3
U 101 Soc. & Cult. ....	3				

### SOPHOMORE YEAR

CHE 210 Mass Balances .....	3	CHE 211 Energy Balances .....	4	EGR 201 Thermo. I .....	3
MH 264 An. Geom. & Cal. ....	5	EH 220 Great Books I .....	5	CHE 361 Transport I .....	4
PS 220 Gen. Phys. ....	4	PS 221 Gen. Phys. ....	4	CH 207 Organic Chem. ....	5
Core/History ** .....	3	MH 265 Diff. Equation .....	3	EH 221 Great Books II .....	5
U 102 Polit. Econ. ....	3	COM 100 Prof. Comm. ....	3		

### JUNIOR YEAR

PA 219 Bus. Ethics .....	5	CHE 363 Transport III .....	4	CHE 367 Unit Oper. II .....	3
CHE 337 Thermo. II .....	4	CHE 366 Unit Oper. I .....	3	CHE 370 Reaction Engr. ....	4
CHE 362 Transport II .....	4	CHE 382 CHE Lab I .....	3	CHE 486 CHE Lab II .....	3
CHE 208 Organic Chem. ....	5	CH 507 Phys. Chem. ....	5	CH 508 Physical Chem. ....	5
		CHE 365 CHE Analysis .....	3	U 103 Indiv. In Soc. ....	3

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### SENIOR YEAR

EE 302 Intr. EE I .....	3	CHE 517 Dig. Proc. Cont. ....	4	CHE 447 Comp. Proc. Des. ....	3
CHE 516 Proc. Dyn. & Cont. ....	4	CHE 546 Comp. Proc. Sim. ....	4	CHE Sc./Des. Elective * .....	3
CHE 444 Proc. Des. Pract. ....	2	CHE 518 Proc. Dyn & Cnt. Lab ..	2	CHE 565 Hazard Mat. Mgt. ....	4
CHE 545 Proc. Econ. & Des. ....	3	Free Elective .....	3	Core/Fine Arts** .....	3
CE 520 Env. Chem. I * .....	3	CE 521 Env. Chem. II .....	3	EHA 404 Tech. Writing .....	5
CE 421 Wastewater Treat. ....	5				

### TOTAL — 210 QUARTER HOURS

\* CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHS.

\* Three hours selected from CHE 479, 487, 499, 501, 550, 512, 515, 595.

\* May be replaced by EE 261.

\*\* For University Core options to satisfy these requirements, see page 39.

## Pre-Medicine Option

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 111 Gen. Chem. I .....	5	CH 112 Gen. Chem. I .....	5	CH 113 Gen. Chem. I .....	5
MH 161 An. Geom. & Cal. ....	5	MH 162 An. Geom. & Cal. ....	5	MH 163 An. Geom. & Cal. ....	5
CHE 101 Intr. CHE I .....	1	EH 110 Eng. Comp. ....	5	CHE 213 Comp. in CHE .....	3
Core/History ** .....	3	U 102 Polit. Econ. ....	3	BI 101 Prin. Biol. ....	5
U 101 Soc. & Cult. ....	3				

### SOPHOMORE YEAR

CHE 210 Mass Balances .....	3	CHE 211 Energy Balances .....	4	EGR 201 Thermo. I .....	3
CH 207 Organic Chem. ....	5	CH 208 Organic Chem. ....	5	CHE 361 Transport I .....	4
BI 103 Animal Biol. ....	5	PS 220 Gen. Phys. ....	4	CH 209 Organic Chem. ....	4
EH 220 Great Books I .....	5	MH 264 An. Geom. & Cal. ....	5	MH 265 Diff. Equations .....	3
				PS 221 Gen. Physics .....	4

### JUNIOR YEAR

ZY 310 Cell Biology .....	6	CHE 363 Transport III .....	4	CHE 367 Unit Oper. II .....	3
CHE 337 Thermo. II .....	4	CHE 366 Unit Oper. I .....	3	CHE 370 Reaction Engr. ....	4
CHE 362 Transport II .....	4	CHE 382 CHE Lab I .....	3	CHE 486 CHE Lab II .....	3
EH 221 Great Books II .....	5	CHE 507 Physical Chem. ....	5	CH 508 Phys. Chem. ....	5
		CHE 365 CHE Analysis .....	3	Free Elective .....	1

### SENIOR YEAR

EE 302 Intr. EE I * .....	3	CHE 517 Dig. Proc. Cont. ....	4	CHE 447 Comp. Proc. Des. ....	3
CHE 516 Proc. Dyn. & Cont. ....	4	CHE 546 Comp. Proc. Sim. ....	4	CHE 595 Biochem. Engr. ....	3
CHE 444 Proc. Des. Pract. ....	2	CHE 518 Proc. Dyn & Cnt. Lab ..	2	PA 218 Ethics in Hlth. Sci. ....	5
CHE 545 Proc. Econ. & Des. ....	3	EHA 404 Tech. Writing .....	5	Core/Fine Arts** .....	3
Core/History** .....	3	Core/History** .....	3	U 103 Indiv. in Soc. ....	3

### TOTAL — 210 QUARTER HOURS

\* CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHS.

\* May be replaced by EE 261.

\*\* For University Core options to satisfy these requirements, see page 39.

NOTE: Students are encouraged to select one or more additional courses from the following list as appropriate for medical school: ZY 300, 302, 524, CH 518, 519.

## Pulp and Paper Engineering Option

### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 111 Gen. Chem. I .....	5	CH 112 Gen. Chem. I .....	5	CH 113 Gen. Chem. I .....	5
MH 161 An. Geom. & Cal. ....	5	MH 162 An. Geom. & Cal. ....	5	MH 163 An. Geom. & Cal. ....	5
U 101 Soc. & Cult. ....	3	EH 110 Eng. Comp. ....	5	CHE 213 Comp. in CHE .....	3
Core/History ** .....	3			Core/History ** .....	3

### SOPHOMORE YEAR

CHE 210 Mass Balances .....	3	CHE 211 Energy Balances .....	4	EGR 201 Thermo. I .....	3
MH 264 An. Geom. & Cal. ....	5	EH 220 Great Books I .....	5	CHE 361 Transport I .....	4
PS 220 Gen. Phys. ....	4	PS 221 Gen. Phys. ....	4	CH 207 Organic Chem. ....	5
Core/History ** .....	3	MH 265 Diff. Equation .....	3	EH 221 Great Books II .....	5
U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3		

### JUNIOR YEAR

CHE 515 Comp. App. CHE .....	3	CHE 363 Transport III .....	4	CHE 367 Unit Oper. II .....	3
CHE 337 Thermo. II .....	4	CHE 366 Unit Oper. I .....	3	CHE 370 Reaction Engr. ....	4
CHE 362 Transport II .....	4	CHE 382 CHE Lab I .....	3	CHE 486 CHE Lab II .....	3
CHE 208 Organic Chem. ....	5	CH 507 Phys. Chem. ....	5	CHE 501 Intr. P&P Tech. ....	3
EE 302 Intr. EE I * .....	3	CHE 365 CHE Analysis .....	3	CH 508 Physical Chem. ....	5

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### SENIOR YEAR

FP 478 Wood Chemistry .....	4	CHE 517 Dig. Proc. Cont. ....	4	CHE 547 P&P Proc. Des. ....	3
CHE 516 Proc. Dyn. & Cont. ....	4	CHE 556 P&P Proc. Sim. ....	3	CHE 488 P&P Engr. Lab. ....	3
CHE 444 Proc. Des. Pract. ....	2	CHE 518 Proc. Dyn. & Cnt. Lab. ....	2	CHE 512 Surf. Col. Sci. ....	3
CHE 545 Proc. Econ. & Des. ....	3	EHA 404 Tech. Writing ....	5	CHE 512L Surf. Col. Sci. Lab. ....	1
CHE 410 P&P Proc. Lab. ....	3	CHE 510 P&P Engr. ....	3	PA 219 Bus. Ethics ....	5
COM 100 Prof. Comm. ....	3			Core/Fine Arts** .....	3

### TOTAL — 210 QUARTER HOURS

\* CH 103, 103L: 104, 104L: 105, 105L are acceptable substitutes for CH 111, 112, 113 for students transferring into CHE or PCHE.

\* May be replaced by EE 261.

\*\* For University Core options to satisfy these requirements, see page 39.

## Department of Civil Engineering

Civil Engineers play an essential role in the realization of the most basic needs and goals of society including the need for shelter, mobility, water, air, productive land, energy supplies and recreational facilities. Civil engineering is an extremely broad field and draws from all the basic sciences. Its areas of activities range from the design of structural systems to construction of the same, from earth physics to microbiology, from traffic flow analysis to the disposal of hazardous waste. The scope and complexity of the field, and its degree of involvement with other fields, has increased rapidly with the development of modern science and technology and with the growth of population and national economies.

Likewise, the challenges and opportunities to serve mankind significantly have dramatically increased since civil engineers serve and interact with the public more than any other engineering discipline. Opportunities for continuing high technology planning and design in both the public and private sectors as well as movement into top management positions are excellent in civil engineering.

Since new problems are continually presenting special challenges to the civil engineer, the civil engineering curriculum at Auburn University emphasizes the applications of basic scientific principles and mathematics for the solution of engineering problems. The first two years of work are primarily concerned with the scientific and mathematical principals that form the basis of engineering practice.

The last two years include the applications of these principles, along with opportunities for elective courses in areas of individual interest. All students receive instruction in construction management, soil mechanics, transportation, hydraulics, structural analysis and design and environmental engineering. Computer applications are integrated throughout the required and elective offerings.

### Curriculum in Civil Engineering (CE)

#### FRESHMAN YEAR

(Same as Pre-Engineering Curriculum)

#### SOPHOMORE YEAR

First Quarter		Second Quarter		Third Quarter	
MH 264 Ag. & Calculus .....	5	MH 265 Diff. Equations .....	3	EGR 207 Mech. of Solids .....	3
PS 221 Physics II .....	3	PS 222 Physics III .....	3	EGR 201 Thermodynamics I .....	3
PS 221L Physics Lab .....	1	PS 222L Physics Lab .....	1	EE 302 Intr. to EE .....	3
U 102 Polit. Econ. ....	3	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
CE 200 Intr. to CE .....	1	EGR 205 Statics .....	3	CE 301 Analysis .....	3
CE 202 CE Comp. Appl. ....	3	CE 201 Surveying .....	3		

#### JUNIOR YEAR

EGR 235 Dynamics .....	3	CE 300 Prof. Dev. ....	1	EH 404 Tech. Writing .....	5
GL 315 Engr. Geology .....	4	CE 303 Statistics .....	4	CE 320 Urban Hyd. Des. ....	3
IE 360 Engr. Econ. ....	3	CE 311 Hydraulics II .....	3	CE 350 Highway Engr. I .....	3
CE 310 Hydraulics I .....	3	CE 311L Hydraulics Lab .....	1	CE 420 Water Treat. ....	3
CE 360 Structures I .....	4	CE 362 Structures II .....	3	CE 430 Intr. Soil Mech. ....	4
		CE 382 Highway Mtls. ....	4		

#### SENIOR YEAR

U 101 Soc. & Cult. ....	3	U 103 Indiv. in Soc. ....	3	Core/Fine Arts** .....	3
CE 421 Waste Treat. ....	4	COM 100 Prof. Comm. ....	3	EC 301 Ec. Pr./Bus. Pol. ....	of
CE 431 Soil & Fnd. Engr. ....	3	CE Design Elective .....	3	MN 310 Prin. Mgt. ....	5
CE 441 Intr. to Construction .....	3	Tech. Elective .....	3	CE 401 Prof. Practice .....	1
CE 460 Concrete Des. I .....	3	Free Elective .....	3	CE Sr. Design Project .....	5
				Tech. Elective .....	3

### TOTAL — 201 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Acceptable History sequences are HY 101, 102, 103-World History and HY 121, 122, 123-Technology and Civilization. CE 400 and 421 are writing reinforcement courses.

A total of 12 hours ROTC credit may be substituted for the Free Elective, COM 100, CE 200 and either EC 301 or MN 310.

Technical and Design Electives must be selected from an approved course list.

The Senior Design Project must be selected from an approved course list.

#### TECHNICAL AND DESIGN ELECTIVES

A list of suggested technical and design electives may be obtained in the departmental office. Any section not on the list must be approved by the head of the department. Electives may be selected to emphasize construction management, environmental engineering, hydraulics and hydrology (ground and surface water), pavement materials, structural engineering and transportation engineering.

### Environmental Science

Environmental Science is administered by the Department of Civil Engineering. It is an interdepartmental program based on the strengths of Auburn University in the engineering, biological and physical sciences.

Environmental science specialists are employed by industries, consultants, trade associations and by governmental agencies to work in areas such as hazardous materials management, environmental impact assessment, water supply, refuse and wastewater control, air pollution control, radiation health physics, industrial hygiene, institution sanitation, food sanitation, industrial safety, public health and local, national and global ecology.

The program leading to a Bachelor of Science degree is designed to prepare graduates for careers in the broad field of environmental science. Students desiring to incorporate an engineering or computer science base into this program are strongly encouraged to do so. For further details concerning the program, interested students should contact Dr. S. Rod Jenkins, Department of Civil Engineering (205/844-6271), Harbert Engineering Center.

#### Curriculum in Environmental Science (ENS)

##### FRESHMAN YEAR

###### First Quarter

CH	103 Chemistry I	4
CH	103L Chemistry I Lab	1
MH	160 Pre-Cal. w/Trig.	5
EH	110 Eng. Comp. I	5
	Core/History**	3

###### Second Quarter

CH	104 Chemistry II	4
CH	104L Chemistry II Lab	1
MH	161 Ag. & Calculus	5
	Core/Fine Arts**	3
	Core/History**	3

###### Third Quarter

CH	105 Chemistry III	4
CH	105L Chemistry III Lab	1
BI	101 Prin. Biol.	5
EH	220 Great Books I	5
	Core/History**	3

##### SOPHOMORE YEAR

BI	107 Environ. Biology	5
PS	205 Physics I	3
PS	205L Physics I Lab	1
EH	221 Great Books II	5
ZY	205 Wildlife Cons.	3

U	101 Soc. & Cult.	3
PS	206 Physics II	3
PS	206L Physics II Lab	1
CH	203 Org. Chem.	4
CH	203L Org. Chem. Lab	1
PA	102 Intr. to Ethics	5

AM	304 Meteorology	5
PS	207 Physics III	3
PS	207L Physics III Lab	1
CH	204 Anal. Chemistry	4
CH	204L Anal. Chem. Lab	1
AEC	210 Microcomputers	3

##### JUNIOR YEAR

PO	327 Policy Process	5
BI	103 Animal Biol.	5
BY	300 Gen. Microbiol.	5
CSE	120 Computers	3

MT	344 Environ. Law	4
COM	100 Prof. Comm.	3
U	102 Polit. Econ.	3
ZY	306 Ecology	5
	Free Elective	3

AY	304 Gen. Soils	5
ADS	220 Anim. Biochem. or	
NF	318 Nutr. Biochem.	5
CE	523 Env. Hlth. Engr.	3
EHA	404 Tech. Writing	5

##### SENIOR YEAR

BST	215 Bio. Stat.	5
IE	503 Occup. Safety	3
U	103 Indiv. In Soc.	3
CE	520 Env. Egr. Chem. I	3
CE	520L Env. Egr. Ch. Lab	1
	Free Elective	3

BY	541 Environ. Micro.	5
CE	524 Air Pollution	5
CE	521 Env. Engr. Chem. II	3
CE	521L Env. Egr. Ch. Lab II	1
	Prof. Elective	3

RSY	362 Comm. Org.	5
CE	527 Fnd Wat/Waste Tr.	5
	Prof. Elective	3
	Free Elective	3

#### TOTAL — 206 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Acceptable History sequences are HY 101, 102, 103-World History and HY 121, 122, 123-Technology and Civilization.

CE 523 and 527 are writing reinforcement courses.

A total of 12 hours of ROTC credit may be substituted for COM 100 and the Free Electives.

Professional Electives must be selected from an approved course list.

### Geological Engineering

The curriculum in geological engineering is administered by the Department of Civil Engineering in the College of Engineering. It is an interdisciplinary curriculum conducted cooperatively by the Civil Engineering Department and Geology Department in the College of Sciences and Mathematics. The curriculum is monitored by a faculty Geological Engineering Curriculum Committee.

The program in geological engineering consists of 217 quarter hours representing 12 regular academic quarters and one regular summer session during which the students are required to

take Geological Field Methods (six credit hours, summers only), a part of the engineering design requirement for ABET accreditation. The curriculum consists of the general freshman requirements of the College of Engineering, rigorous mathematics and chemistry through organic chemistry (CH 201) and a complete complement of basic engineering and geology courses.

The objective of the program is to produce graduates who will be able to pass the Fundamentals of Engineering (FE) test, and ultimately, the test for registration as a professional engineer and/or the test for professional registration as a geologist. Students will also be well prepared for advanced degree programs in engineering or geology. The curriculum will emphasize the physics, chemistry, biology, hydrology and geology of the near-surface portions of the crust which are the major portions involved with geotechnical, water supply, groundwater contamination and waste disposal problems. Subjects related to mining and mineral engineering are not emphasized.

## Curriculum in Geological Engineering (GE) \*

## FRESHMAN YEAR

(Same as Pre-Engineering Curriculum)

**SOPHOMORE YEAR**

CH	105 Chemistry	4	CH	207 Org. Chem.	4	GL	315 Engr. Geology	4
CH	105L Chem. Lab	1	MH	265 Diff Equations	3	EGR	201 Thermo I	3
MH	264 Ag. & Calculus	5	PS	222 Physics	3	MH	362 Engr. Math I	3
PS	221 Physics	3	PS	222L Physics Lab	1	EH	220 Great Books I	5
PS	221L Physics Lab	1	EGR	205 Statics	3	EGR	207 Mech. Solids	3
	Tech. Elective	3	CE	202 Computer	3			

### JUNIOR YEAR

EH	221 Great Books II	5	GL	301 Mineralogy	5	EH	404 Tech. Writing	5
IE	360 Engr. Econ.	3	CE	311 Hydraulics II	3	U	101 Soc. & Cult.	3
EE	302 Circuits	3	CE	311L Hydraulics Lab	1	CE	515 Subsurf. Hydro.	3
CE	310 Hydraulics I	3	CE	312 Hydrology	3		Tech. Elective	3
CE	303 Statistics	4	CE	430 Intr. to Soils	4			

## SUMMER QUARTER/JUNIOR YEAR

GL 215 Geol. Field Methods ..... 6

## SENIOR YEAR

GL	240 Struct. Geol.	5	U	103 Indiv. in Soc.	3	CE	520 Env. Engr. Chem.	3
U	102 Polit. Econ.	3	COM	100 Prof. Comm.	3	GL	305 Ign. Met. Petrol.	5
CE	431 Soil & Found.	3	GL	401 Sed. Petrology	5		Core/Fine Arts**	3
CE	516 Subsur. Meas.	3		Tech. Elective	3	GL	411 Stratigraphy	5
	Tech. Elective	3						

## TOTAL — 204 QUARTER HOURS

\* There are recommended elective sequences in Business Admin., Environmental Engr., Geotechnical, Groundwater Modeling, Soil Science, Structures and Urban Hydrology.

\*\* For University Core options to satisfy these requirements, see page 39.

GL 215 is a writing reinforcement courses.

A total of 12 hours of ROTC credit may be substituted for the technical electives.

Technical Electives must be selected from an approved course list.

## Department of Computer Science and Engineering

**Computer Science** — The Computer Science curriculum, leading to the degree Bachelor of Science in Computer Science, combines a general foundation in science, mathematics, social sciences and humanities and the fundamentals of computer science with advanced work in the theoretical bases for computation, design and analysis of algorithms and software development methodologies. It is intended to prepare students for a range of careers in software design, analysis and development, as well as for graduate study. Coursework in computer science includes hands-on exposure to a variety of computer systems, tools and techniques. The curriculum meets general AU requirements and has been accredited by the Computer Science Accreditation Commission (CSAC) of the Computer Sciences Accreditation Board, Inc.

## Curriculum in Computer Science (CS)

## FRESHMAN YEAR

(Same as Pre-Engineering Curriculum)

**SOPHOMORE YEAR**

## First Quarter

Second Quarter			Third Quarter					
CSE	200 Fund. Comp. Sci. I	4	CSE	220 Fund. Comp. Sci. II	3	CSE	350 Comp. Mth. Engr.	4
PS	221 Gen. Physics II	3	PS	222 Gen. Physics III	3	EE	330 A&D Logic Cir.	4
PS	221L Gen. Physics II Lab.	1	PS	222L Gen. Physics III Lab.	1	EH	221 Great Books I	5
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
MH	264 An. Geom. & Cal.	5	EH	220 Great Books I	5			
			MH	266 Lin. Algebra	3			

### Second Quarter

### Third Quarter



## College of Engineering

### JUNIOR YEAR

CSE 360 Fund. Algorithms .....	3	CSE 400 Syst. Prog. ....	3	CSE 405 Oper. Syst. ....	3
CSE 422 Intr. Sftw. Engr. ....	3	CSE 400L Syst. Prog. Lab .....	1	CSE 412 Database Sys. I .....	3
EE 335 Comp. O&A.Prg. ....	3	IE 331 Prob. for Engr. ....	3	EHA 404 Tech. Writing .....	5
Minor* .....	5	Minor* .....	5	Minor* .....	5
CSE 324 Discrete Struct. ....	3	Tech. Elective *** .....	3	.....	.....
.....	.....	Free Elective .....	3	.....	.....

### SENIOR YEAR

CSE 520 Thy. Form. Lang. ....	3	CSE 530 Des. Comp. Arch. ....	3	CSE 521 Compiler Const. ....	3
CSE 518 Prog. Lang. Conc. ....	3	CSE 560 Artificial Intel. ....	4	CSE 521L Comp. Const. Lab .....	1
Minor* .....	5	Minor* .....	5	CSE 527 D&A of Alg. ....	3
CSE Elective *** .....	3	CSE Elective *** .....	3	CSE Elective *** .....	3
Free Elective .....	3	.....	.....	Tech. Elective *** .....	3
.....	.....	.....	.....	Core/Fine Arts ** .....	3

### TOTAL — 200 QUARTER HOURS

\* Minor must be approved by CSE Department Director of Undergraduate Studies.

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*Selected from approved lists obtained from the CSE undergraduate counselor.

Six hours of Basic ROTC may be substituted for six hours of free electives. Six hours of Advanced ROTC may be substituted for six hours of technical electives.

**Computer Engineering** — The Computer Engineering curriculum, leading to the degree Bachelor of Computer Engineering, provides an engineering science base that has been enriched with a range of courses from social sciences and the humanities. This is a design-oriented curriculum, intended to prepare students for graduate study or professional careers in computer system integration, systems programming, computer architecture or other areas concerned with the interface between hardware and software. Coursework emphasizes practical laboratory experience in digital design, software development and other design applications. The curriculum meets general Auburn University requirements and has been accredited by the Accreditation Board for Engineering Technology (ABET).

### Curriculum in Computer Engineering (CPE)

#### FRESHMAN YEAR

(Same as Pre-Engineering Curriculum)

#### SOPHOMORE YEAR

##### Second Quarter

CSE 200 Fund. Comp. Sci. I .....	4	CSE 220 Fund. Comp. Sci. II .....	3	CSE 350 Comp. Mth. Engr. ....	4
PS 221 Gen. Physics II .....	3	PS 222 Gen. Physics III .....	3	EE 330 A&D Logic Cir. ....	4
PS 221L Gen. Physics II Lab. ....	1	PS 222L Gen. Physics III Lab. ....	1	MH 266 Lin. Algebra .....	3
MH 264 An. Geom. & Calc. ....	5	EE 261 Lin. Cir. Anal. I .....	3	EE 263 Lin. Cir. An. II .....	4
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	EE 264 Lin. Cir. An. II Lab .....	1
.....	.....	MH 265 Lin. Diff Equations .....	3	.....	.....

#### JUNIOR YEAR

CSE 360 Fund. Algorithms .....	3	CSE 400 Syst. Prog. ....	3	CSE 405 Oper. Syst. ....	3
CSE 422 Intr. Sftw. Engr. ....	3	CSE 400L Syst. Prog. Lab .....	1	EE 430 Comp. Sys. Des. ....	4
EE 335 Comp. O&A.Prg. ....	3	EE 371 Electronics I .....	4	U 103 Indiv. In Soc. ....	3
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	Free Elective .....	3
EHA 404 Tech. Writing .....	5	EGR 205 Engr. Mech. Stat. ....	3	Core/Fine Arts** .....	3
.....	.....	Free Elective .....	3	.....	.....

#### SENIOR YEAR

CSE 520 Thy. Form. Lang. ....	3	CSE Arch. Elective*** .....	3	CSE 521 Compiler Const. ....	3
EE 530 Comp. Arch. & Des. ....	4	CSE 560 Artificial Intel. ....	4	CSE 521L Comp. Const. Lab .....	1
IE 360 Engr. Econ. Anal. ....	3	CSE 571 Design Project .....	3	CSE 572 Des. Project .....	2
CSE Elective*** .....	3	CSE Elective*** .....	3	CSE Elective*** .....	3
ME 201 Thermodynamics I .....	or	IE 331 Prob. for Engr. ....	3	CSE 412 Database Sys. I .....	3
ME 235 Dynamics I .....	3	.....	.....	Tech. Elective*** .....	3

### TOTAL — 200 QUARTER HOURS

\*\*For University Core options to satisfy these requirements, see page 39.

\*\*\*Selected from approved lists obtained from the CSE undergraduate counselor.

Six hours of basic ROTC may be substituted for six hours of Free Elective. Six hours of advanced ROTC may be substituted for IE 360 and three hours of Technical Elective.

## Department of Electrical Engineering

The Electrical Engineering curriculum is a carefully formulated program designed to prepare its graduates for the practice of engineering at a professional level in an era of rapid and challenging technological development. It is accredited by the Accreditation Board for Engineering and Technology (ABET).

Fundamental to the program is a broad liberal education base of humanistic — social studies

which are intended to impart a sense of social awareness and responsibility, tempered by humanistic values. An extensive program of study in basic sciences and mathematics provides the physical understanding and analytical tools which are requisite for the study of engineering.

The professional portion of the curriculum emphasizes seven basic areas of study. These are: circuit analysis, communications, controls, digital systems, electronics, electromagnetics, and power systems. Technical electives in the senior year provide flexibility in the curriculum to accommodate a diversity of interests and talents. A student, through choice of technical electives, can pursue deeper study in a particular subject area or choose a variety of courses to maintain a broad program. Electives must be selected from an approved list which is provided by the student's counselor.

The curriculum places strong emphasis on the importance of hands-on laboratory experience, knowledgeable use of digital computer systems, oral and written communications skills and the development of an ability to maintain professional competence through continued self-study after graduation.

## Curriculum in Electrical Engineering (EE)

## FRESHMAN YEAR

(Same as Pre-Engineering Curriculum)

**SOPHOMORE YEAR**

First Quarter			Second Quarter			Third Quarter		
MH	264 An. Geom. & Calc.	5	MH	265 Lin. Diff. Equations	3	MH	266 Lin. Algebra	3
PS	221 Gen. Physics I	3	PS	222 Gen. Physics III	3	EE	263 Lin. Cir. An. II	4
PS	221L Gen. Physics II Lab	1	PS	222L Gen. Physics III Lab	1	EE	264 Lin. Cir. An. Lab	1
EH	220 Great Books I	5	EE	261 Lin. Cir. An.	3	EE	269 Electromag. Prin. I	3
U	101 Soc. & Cult.	3	EH	221 Great Books II	5	EGR	205 Engr. Mech. Stat.	3
			U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3

### JUNIOR YEAR

EE 330 A&D Logic Cir. ....4	EE 340 Communications I.....3	EE 335 Comp. D&A Lang. ....3
EE 362 Linear Systems .....5	EE 371 Electronics I.....4	EE 341 Communications II.....4
EE 381 Intr. Elec. Power Engr. ....3	EE 382 Electromech. En. Conv. ....4	EE 351 Lin. Feedback Sys. ....4
EE 392 Electromag. Prin. II.....3	EE 393 Appl. Electromag. ....4	EE 374 Electronics II.....3
Engr. Sci. Elective*.....3	IE 331 Prob. for Engr. ....3	EE 383 Power Sys. An. ....3

### SENIOR YEAR

EE 430 Comp. Sys. Design .....	4	EE 401 Sr. Design Projects .....	3	EE 402 Sr. Des. Projects .....	3
EE 452 Disc. & Nonl. Syst. ....	4	Tech. Elective*** .....	6	Tech. Electives*** .....	9
EE 475 Electronics III .....	4	IE 360 Engr. Econ. An. ....	3	Core/Fine Arts** .....	3
EHA 404 Tech. Writing .....	3	PS 320 Mod. Physics .....	3	Free Elective .....	3
		COM 100 Prof. Comm. ....	3		

## TOTAL — 210 QUARTER HOURS

\*Engineering Science Elective: to be chosen from EGR 207, 201, 235 and MTL 210.

\*\*For University Core options to satisfy these requirements, see page 39.

\*Technical Electives: to be chosen from an approved list which can be obtained from the Electrical Engineering Undergraduate Counselor.

Basic ROTC may be substituted for COM 100 and three hours of Free Electives. Advanced ROTC may be substituted for IE 360 and three hours of Technical Electives.

## Department of Industrial Engineering

Industrial Engineering differs from other branches of the engineering profession in three basic ways. First, it covers all types of industrial, commercial and service activity. Second, it gives substantial emphasis to the role of people as well as machines and materials in systems design. Third, it becomes heavily involved in the economic and financial aspects of the problems it considers. While the industrial engineer is still concerned with the integration of manufacturing and production systems, many non-manufacturing industrial organizations have recognized the value of Industrial Engineering techniques. Thus, Industrial Engineers are practicing in health, marketing, financial, governmental, military, transportation, educational, agricultural and consulting organizations as well as manufacturing firms.

The curriculum emphasizes the systems approach to the design, analysis, and control of manufacturing and production systems. Graduates are prepared to resolve problems concerning materials, people, products, services and information. The curriculum includes courses in manufacturing processes, computer systems, production systems, industrial ergonomics and safety, economic analysis, statistical analysis, operations research, and the design of work methods. The curriculum is flexible so as to enable the development of individual professional interests through the availability of the equivalent of approximately one quarter coursework of elective hours.

Many varying employment opportunities are available to the graduate since Industrial Engineering competencies are required by almost all manufacturing and service organizations.

Additionally, Industrial Engineering training and experience provides excellent training for many management positions.

## Curriculum in Industrial Engineering (IE)

### FRESHMAN YEAR

(See Pre-Engineering Curriculum)

#### First Quarter

MH	264 An. Geom. & Calc.	5
PS	221 Gen. Physics II	3
PS	221L Gen. Phys. Lab II	1
IE	172 Graph. Com. & Des.	3
EH	220 Great Books I	5

#### SOPHOMORE YEAR

##### Second Quarter

IE	331 Prob. for Engr.*	3
EGR	205 Engr. Mech. Stat.	3
PS	222 Gen. Physics III	3
PS	222L Gen. Physics Lab III	1
MH	265 Lin. Diff. Equations	3
EH	221 Great Books II	5

##### Third Quarter

IE	332 Engr. Stat. I	3
IE	341 Oper. Res. I	3
MH	266 Lin. Algebra	3
EGR	207 Mech. of Solids	3
U	101 Soc. & Cult.	3

IE	333 Engr. Stat. II	3
IE	343 Oper. Res. II	3
MTL	220 Matls. & Prop. I	3
EGR	235 Dynamics	3
U	102 Polit. Econ.	3

#### JUNIOR YEAR

IE	301 Mthds. Engr.	3
IE	360 Engr. Econ. An.*	3
EGR	201 Thermodynamics	3
EE	302 Intr. to EE I	3
U	103 Indiv. in Soc.	3

#### SENIOR YEAR

IE	401 Occ. Ergo. & Saf.	5
IE	456 Simulation	3
IE	425 Prod. Cont. Func. II	3
AC	215 Cost Accounting***	5
IE	497 Sr. Des. Proj. I	2
IE	433 Stat. Qual. Cont.	3
IE	470 Info. Dec. Syst.	3
IE	482 Manf. Sys. Des.	3
IE	Tech. Elective##	6

IE	380 Manf. Engr. I	4
IE	390 Seminar in IE***	1
IE	422 Prod. Cont. Func. I	3
EE	303 Intr. to EE II	3
EH	404 Tech. Writing	5

### TOTAL — 194 QUARTER HOURS

\* A very demanding attendance policy exists for the first day in these courses.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Six hours of basic ROTC may be substituted for AC 215 and IE 390.

# Electives within Industrial Engineering are to be selected in accordance with an approved list which may be obtained from the head of the department.

## Technical Electives are to be selected in accordance with an approved list which may be obtained from the head of the department. Six hours of advanced ROTC may be substituted for general technical electives.

### TECHNICAL ELECTIVES

The Industrial Engineering curriculum includes 15 hours of technical electives. The electives may come from a variety of areas including, but not limited to, manufacturing engineering, occupational ergonomics, safety engineering, computer science, operations research and statistics, production systems, engineering management and engineering methods. Example courses in several areas are listed below. A pamphlet describing elective options is available in the I.E. department office. The student is encouraged to develop an elective sequence in one or two areas and must obtain faculty advisor approval of the courses chosen. An undergraduate student wishing to take a 600-level technical elective must meet the conditions imposed by the Graduate School.

#### MANUFACTURING ENGINEERING/PRODUCTIONS SYSTEMS

IE 480, 484, 525, 529, 538, 545, 580, 584, 588, 622, 623, 625, 656, 685, ME 316, 537, MTL 320, 436.

#### OCCUPATIONAL ERGONOMICS/SAFETY ENGINEERING

IE 501, 502, 503, 601, 604, 605, 606, 607, 608, 609, PG 561.

#### ENGINEERING METHODS

AE 300, 302, CE 360, 362, EE 330, ME 302, 322, MTL 320.

#### ENGINEERING MANAGEMENT

EC 659, IE 525, 560, 625, MT 331, 434, PG 561, 562.

#### COMPUTER SCIENCE

CSE 200, 220, 300, 301, 340, 350, 360, 412, 512, 520, 523, EE 330, 335, 430, 521, MH 371, MHC 550.

#### OPERATIONS RESEARCH AND STATISTICS

IE 525, 536, 538, 541, 542, 547, 549, 551, 625, 642, 656

## Department of Mechanical Engineering

The basic engineering science fields of mechanics, materials science, thermodynamics, fluid mechanics and heat and mass transfer are covered in depth in this curriculum to give students understanding and the ability to solve problems in these areas. In addition, courses offered include instruction in combustion engines, gas turbines, power plants, air conditioning, refrigeration, automatic controls, turbomachinery and machine design. Courses in electrical subjects equip the graduate with needed fundamental knowledge in this field. Computer programming is learned through some special courses and engineering applications and computer experience is integrated throughout the curriculum. Practice at developing written and verbal skills is also provided.

Modern courses at the senior level, employing both group and individual projects and computer-aided design, provide an opportunity for the student to solve typical engineering



CH	507 Phys. Chem.	5	CH	508 Phys. Chem.	or	MTL	420 Struct. & Prop. Lab	3
MTL	338 Phase Diagrams	3	CH	207 Org. Chem.	5	MTL	436 EMS-Fer. Metallg.	3
EE	302 Intr. to EE I	3	EH	404 Tech. Writing	5	MTL	447 Mech. Engr. Mtlis.	3
MTL	336 Phys. Anal. of Mtlis. I	4	MTL	337 Phys. An. of Mtlis. II	3	EE	301 Engr. Instru.	3
			U	101 Soc. & Cult.	3	U	102 Polit Econ.	3
							Tech. Elective	3
<b>SENIOR YEAR</b>								
MTL	448 Intr. Ceramics	3	MTL	514 X-ray Lab	3	MTL	570 El. Prop. of Mtlis.	3
MTL	513 Intr. X-ray Cryst.	3	MTL	575 Rate Proc. in Mtlis.	3	MTL	551 Adv. Projects	3
MTL	515 Polymer Tech. I	3	MTL	537 Manf. Processes	3	ME	421 Heat Transfer I	3
MTL	550 Therm. of Mtlis. Sys.	3		Core/Fine Arts**	3		Tech. Elective	3
U	103 Indiv. in Soc.	3		ROTC or Free Elective	3		ROTC or Free Elective	3

## TOTAL — 199 QUARTER HOURS

<sup>\*\*</sup> For University Core options to satisfy these requirements, see page 39.

#### SUGGESTED TECHNICAL ELECTIVES

Selected from approved list which can be obtained from the chairman of the Materials Engineering Curriculum Committee.

The programs in the Department of Textile Engineering are designed to be sufficiently flexible to serve the needs of the student who seeks a career in the textile industry. Textiles is a truly multi-disciplinary program, and frequently a career in this field will draw on knowledge from the sciences, arts, combinations of these, economics, business and others.

The curricula are planned to provide for the needs of students as perceived by them and assisted by the faculty of the department.

Well equipped laboratories complement the lecture program. These laboratories represent the types of equipment, bench study and research capabilities so vital to the learning of and contributing to a career in the industry.

The size and diversity of textiles and the allied industries provide careers in manufacturing, research, machinery design, chemicals and dyestuffs, sales, styling and design, technical service and others. Also, the student has the opportunity to prepare for graduate school if he or she desires.

For those students who want to plan their education path in conjunction with industrial experience the Alabama textile industry cooperates with the Department of Textile Engineering through the Cooperative Education Program.

The Textile Engineering Department conducts both applied and fundamental research. In cooperation with the Engineering Experiment Station and other segments of the university, the department serves textiles through the utilization of its facilities. In conjunction with research undertaken by the faculty, undergraduates may have the opportunity to conduct research in areas of their special interest. Graduate students are used when possible to conduct approved research that may be applied toward their graduate program requirements.

The Department of Textile Engineering offers three curricula to prepare for a career in one of the many facets of the industry. Textile courses in these curricula are combined with courses offered by other departments of the university to provide basic instruction in the fundamental sciences, engineering, technology and humanistic-social studies. The three curricula are:

**Textile Chemistry** — Students in this curriculum study the chemistry and physics of natural and man-made fibers and the theory and practice of textile dyeing and finishing. It prepares students for graduate work and careers as chemists and dyers in the textile, man-made fibers, dyestuff and other industries allied to textiles.

**Textile Engineering** — The curriculum in Textile Engineering offers study in basic engineering. It includes engineering science, humanistic-social studies and the textile subjects needed for a fundamental understanding of the textile processes, materials and industry. It prepares students for graduate study and careers in textile research, engineering, production and management in the primary textile industry and allied industries, such as the manufacture of textile machinery and man-made fibers.

**Textile Management and Technology** — This curriculum prepares students for production, administrative and managerial positions in a textile career. In their junior and senior years students select courses in other disciplines through a technical elective sequence. These courses are from disciplines such as Consumer Affairs, Economics, Industrial Engineering, Management and Marketing. Entering students who are not proficient in college algebra are required to take five hours of algebra for no credit toward graduation.



## Curriculum In Textile Chemistry (TC)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
CH 111 Gen. Chem. .... 4	CH 112 Gen. Chem. .... 4	CH 113 Gen. Chem. Lab .... 4
CH 111L Gen. Chem. Lab .... 1	CH 112L Gen. Chem. Lab .... 1	CH 113L Gen. Chem. Lab .... 1
EH 110 Eng. Comp. .... 5	Core/Philosophy ** .... 5	PS 220 Gen. Phys. I .... 3
MH 161 An. Geom. & Calc. .... 5	MH 162 An. Geom. & Calc. .... 5	PS 220L Gen. Phys. Lab .... 1
TT 101 Intr. Tex. .... 1	TT 102 Surv. Text. Ind. .... 1	MH 163 An. Geom. & Calc. .... 5
CSE 100 Intr. PC .... 3	COM 100 Prof. Com. .... 3	TT 103 Text. Careers .... 1
		Free Elective .... 3
SOPHOMORE YEAR		
CH 207 Org. Chem. .... 4	CH 208 Org. Chem. .... 3	CH 209 Org. Chem. .... 4
CH 207L Org. Chem. Lab .... 1	CH 208L Org. Chem. Lab .... 2	CH 209L Org. Chem. Lab .... 2
MH 264 An. Geom. & Calc. .... 5	MH 265 Lin. Diff. Equations .... 3	Free Elective .... 3
PS 221 Gen. Physics II .... 3	TT 211 Yarn Form Sys. .... 5	TT 221 Fab Form .... 5
PS 221L Gen. Physics II Lab .... 1	EH 221 Great Books II .... 5	
EH 220 Great Books I .... 5		
JUNIOR YEAR		
CH 305 Anal. Chemistry .... 5	Free Elective .... 3	EHA 404 Tech. Writing .... 5
HY 121 Tech. & Civ. I .... 3	TE 340 Chem Proc. I .... 4	TE 341 Chem. Proc. II .... 4
TE 331 Str. & Prp. Fib. & Poly .... 4	TT 270 Stat Qual. Cont. .... 5	EC 200 or 202 or 301 .... 5
TE 332L Fibers Lab .... 2	HY 122 Tech. & Civ. II .... 3	HY 123 Tech. & Civ. III .... 3
TMT 322 Nonwoven. Fab. .... 2		
SENIOR YEAR		
CH 507 Phys. Chem. .... 5	CH 508 Phys. Chem. .... 5	TC 491 Undergrad. Res. .... 3
TC 441 Appl. Dye Theory .... 4	TC 490 Undergrad Res. .... 3	TC 560 Text. Finishes .... 4
TT 350 Text. Testing .... 4	U 102 Polit. Econ. .... 3	U 103 Indiv. in Soc. .... 3
U 101 Soc. & Cult. .... 3	IE 360 Engr. Econ. Anal. .... 3	Core/Fine Arts ** .... 3
		Free Elective .... 3

## TOTAL — 201 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Six hours of Basic ROTC may be used for six hours of free elective.

Six hours of Advanced ROTC may be used for six hours of free elective.

## Curriculum In Textile Engineering (TE)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 161 An. Geom. & Calc. .... 5	MH 162 An. Geom. & Calc. .... 5	MH 163 An. Geom. & Calc. .... 5
CH 103 Fund. Chem. I .... 4	CH 104 Fund. Chem. I .... 4	PS 220 Gen. Physics I .... 3
CH 103L Gen. Chem. Lab .... 1	CH 104L Gen. Chem. Lab .... 1	PS 220L Gen. Physics Lab .... 1
CSE 120 Computer .... 3	EH 110 Eng. Comp. .... 5	Core/Philosophy** .... 5
HY 121 Tech. & Civ. I .... 3	HY 122 Tech. & Civ. II .... 3	HY 123 Tech. & Civ. III .... 3
TT 101 Intr. to Text. .... 1	TT 102 Surv. Text. Ind. .... 1	TT 103 Text. Careers .... 1
Free Elective .... 2		Free Electives .... 1
SOPHOMORE YEAR		
MH 264 An. Geom. & Calc. .... 5	MH 265 Lin. Diff. Equations .... 3	EH 221 Great Books II .... 5
PS 221 Gen. Physics II .... 3	PS 222 Gen. Physics III .... 3	CH 208 Org. Chem. .... 5
PS 221L Gen. Physics Lab .... 1	PS 222L Gen. Physics Lab .... 1	TT 221 Fab. Form Sys. .... 5
EGR 205 Appl. Mech. Stat. .... 3	CH 207 Org. Chem. .... 5	Free Elective .... 3
EH 220 Great Books I .... 5	TT 211 Yarn Form. Sys. .... 5	
JUNIOR YEAR		
ME 235 Dynamics I .... 3	EHA 404 Tech. Writing .... 5	ME 201 Thermodynamics .... 3
TE 331 St.&Pr. of Fibers .... 4	CSE 300 St. Prog. Eng. .... 3	IE 360 Eng. Ec. Anal. .... 3
TE 332 Fibers Lab .... 2	TT 270 St. Text. Pro. .... 5	EE 302 Intr. to EE .... 3
TT 350 Text. Testing .... 4	U 102 Polit. Econ. .... 3	COM 100 Prof. Comm. .... 3
U 101 Soc. & Cult. .... 3		U 103 Indiv. in Soc. .... 3
		Free Elective .... 3
SENIOR YEAR		
TE 363 Text. Thermo. .... 4	TE 360 Mec. Flex. Str. .... 5	TE 456 Instr. & Con. .... 4
TE 490 Design Proj. I .... 3	TE 340 Chem. Proc. I .... 4	TE 341 Chem. Proc. II .... 4
Free Elective .... 3	TE 355 Nm. Me. & Cp. App. .... 3	TE 494 Special Prob. .... 3
EC 200, 202 or 301 .... 5	TE 491 Design Projects II .... 3	Core/Fine Arts** .... 3
		Free Elective .... 3

## TOTAL — 206 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

Six hours of Basic ROTC may be used for six hours of free elective.

Six hours of Advanced ROTC may be substituted for six hours of free elective.

# Curriculum in Textile Management and Technology (TMT)

## FRESHMAN YEAR

### First Quarter

EH	110 Eng. Comp.	5
MH	160 P.C./Tr. *	5
CH	101 Intr. Chem. I	2
CSE	100 Intr. PC Appl.	3
TT	101 Intr. to Tex.	1

### Second Quarter

MH	Core/Philosophy **	5
MH	161 An. Geom. & Calc.	5
CH	102 Int. Chem. II	2
CH	103LGen. Chem. Lab	1
TT	102 Surv. of Text. Ind.	1
	Free Elective	3

### Third Quarter

HY	121 Tech. & Civ. I	3
MH	169 B. Math/Cal.	5
CH	104 Fd. of Chem.	4
CH	104LFd. Chem. Lab	1
TT	103 Tex. Careers	1
COM	100 Prof. Comm.	3

## SOPHOMORE YEAR

EH	220 Great Books I	5
CH	203 Org. Chem.	5
	Free Elective	3
HY	122 Tech. & Civ. II	3

TT	211 Yn. Form. Sys.	5
TT	270 Stat. Tx. P.C.	5
EH	221 Great Books II	5

PS	200 Fd. of Physics	5
TT	221 Fb. Form. Sys.	5
TMT	212 Sp. Tp. Yn. M.	3
HY	123 Tech. & Civ. III	3

## JUNIOR YEAR

AC	215 Fd. of Acct.	5
EC	200 or 202 or 301	5
TT	350 Tex. Testing	4
U	101 Soc. & Cult.	3

TMT	320 Dv. & An. Fab.	5
TMT	231 Tex. Tib. I	5
TMT	241 D & F of Tex.	5
U	102 Polit. Econ.	3

EHA	404 Tech. Writing	5
TMT	232 Tex. Tib. II	3
TMT	242 Ch. of B, D & F	3
U	103 Indiv. in soc.	3

## SENIOR YEAR

MN	310 Prin. of Mgt.	5
TMT	352 Tx. Qual. Ctr.	3
TMT	322 Non. Cv. Fab.	2
TMT	490 Undergrad. Res. I	3
	Tech. Elective ***	3

MN	315 Intr. MIS	2
TMT	480 Ptl. Op. & Cs.	4
TMT	491 Undergrad. Res. II	3
	Tech. Elective ***	3
	Tech. Elective ***	4

	Tech. Elective ***	5
	Tech. Elective ***	5
	Tech. Elective ***	5

## TOTAL — 196 QUARTER HOURS

\* Students must be well grounded in college algebra or take MH 140 for no credit toward graduation.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* See department for approved list of technical electives.

Six hours of basic ROTC may be substituted for six hours of free electives

Six hours of advanced ROTC may be substituted for six hours of technical electives.



# School of Forestry

EMMETT F. THOMPSON, *Dean*

THE SCHOOL OF FORESTRY offers curricula leading to bachelor of science degrees in forest resources and forestry operations. A curriculum leading to the bachelor of science in forest engineering is offered in conjunction with the College of Engineering. The School also offers an Honors program which leads to the degree of Bachelor of Science in Forestry (Honors Program).

The Forest Resources degree is appropriate for students who seek employment in any aspect of forest-land management, from industrial lands where timber production is the primary objective to public lands where recreation or environmental protection is sometimes paramount. This curriculum emphasizes both the biological and economic considerations in forest management. The Forestry Operations degree is similar to Forest Resources in providing an understanding and command of forest management practices. It differs in that the focus is on timber production as well as the technologies for harvesting, forest engineering and forest products production.

The forest engineering curriculum combines professional courses in engineering and forestry for students who want careers in the forest industries that require training in both engineering and forestry.

The School of Forestry's goals are to develop excellence in forestry education and research in a manner compatible with the needs of forestry and forest products firms in the southeastern United States. With respect to undergraduate education, excellence means graduating individuals who have the necessary skills for initial employment as well as the breadth and depth of educational background to support career advancement. The School's orientation in achieving excellence is toward the forest products industry and the raw material base which supports the industry, while fully recognizing that proper concern for timber supply includes responsible stewardship of the total forest resource, including water, soil and wildlife.

## Admission

Freshmen eligibility is determined by the Admissions Office. However, since the requirements for forestry education necessitate high school preparatory work of high intellectual quality and of considerable breadth, the following program is recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry and analytical geometry), four units; chemistry, one unit; biology, one unit; history, literature, social science, two or three units. Physics and foreign language are recommended but not required.

Transfers from other institutions must apply through the Admissions Office. The exact placement of transfer students can be determined only upon review of their transcripts by the School of Forestry. Transfer credit will not normally be allowed for any course with a grade lower than C at another college or university.

Credit toward a degree in any curriculum in the School of Forestry will not be allowed for mathematics, chemistry or physics courses at a level lower than those specified in the curriculum for the degree sought. However, students who are not prepared to take the course prescribed may take lower level courses without degree credit.

Transfer credit for forestry subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit; however, duplication of credit will not be allowed. Equivalency of forestry subjects will be determined by the Dean's Office; however, students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the Dean of Forestry in the first quarter of the student's enrollment in the School of Forestry and the examinations must be completed before the middle of the second quarter. Transfer credit for courses considered upper division courses at Auburn University will not be accepted from two-year colleges.

## Forest Engineering

Forest Engineering is a multi-disciplinary science dealing with two of our most important natural resources — timber and land — and the mechanical devices and processes for their efficient utilization. Forest engineers are professionally trained to apply engineering and forestry principles to solve operations problems in regenerating, growing, harvesting, handling, transporting and processing timber. In addition, they also deal with the engineering problems related to other forest resources.

The curriculum is coordinated by the College of Engineering and the School of Forestry. Students register in the College of Engineering and are assigned academic advisors in Agricultural Engineering and in Forestry. Beginning students should apply to the College of Engineering and complete the Pre-Forest Engineering program. For qualified forestry students who develop an interest in Forest Engineering during the freshman year, an alternate course sequence for completion of the Pre-Forest Engineering program under the guidance of an Agricultural Engineering and a Forestry advisor is available in the School of Forestry.

### Curriculum in Forest Engineering (FYE)

FRESHMAN YEAR														
First Quarter					Second Quarter					Third Quarter				
MH	161	An. Geom. & Cal.	.....	5	MH	162	An. Geom. & Cal.	.....	5	MH	163	An. Geom. & Cal.	.....	5
CH	103	Fund. Chem. & Lab.	.....	4	EH	110	Eng. Comp.	.....	5	PS	220	Gen. Physics I	.....	3
CH	103L	Gen. Chem. Lab.	.....	1			Core Fine Arts***	.....	3	PS	220L	Gen. Phys. Lab I	.....	1
CSE	120	Intro. Engr. Comp.	.....	3	HY	122	Tech. & Civ. II*	.....	3	PA		Ethics**	.....	5
HY	121	Tech. & Civ. I*	.....	3			ROTC or Free Elective	.....	1	HY	123	Tech. & Civ. III*	.....	3
		ROTC or Free Elective	.....	1								ROTC or Free Elective	.....	1
SOPHOMORE YEAR														
MH	264	An. Geom. & Cal.	.....	5	MH	265	Diff. Equat.	.....	3	BI	101	Prin. of Biology	.....	5
PS	221	Gen. Physics II	.....	3	PS	222	Gen. Physics III	.....	3	EGR	301	Thermodynamics I	.....	3
PS	221L	Gen. Phys. Lab. II	.....	1	PS	222L	Gen. Phys. Lab. III	.....	1	EGR	321	Dynamics I	.....	3
FYE	201	Engr. Prin. in Bio. Sys.	.....	5	EGR	207	Mech. of Solids	.....	3	EH	221	Great Books II	.....	5
EGR	205	Appl. Mech. Stat.	.....	3	EH	220	Great Books I	.....	5			ROTC or Free Elective	.....	1
		ROTC or Free Elective	.....	1			ROTC or Free Elective	.....	1					
SUMMER CAMP**														
		FYE	300	Intro. Forest Oper.	.....	2								
		FY	302	Intro. Forest. Biol.	.....	2								
		FYE	304	Forest Surveying	.....	5								
		FY	305	Field Mensuration	.....	4								
		FY	306	Intro. Forest Mgt.	.....	2								
JUNIOR YEAR														
EE	302	Intr. Elec. Engr. I	.....	3	FYE	311	Mob. Equip. Des. Fund.	.....	4	FYE	401	For. Mach. Des.	.....	3
IE	430	Engr. Stat.	.....	5	CE	430	Intr. Soil Mechanics	.....	4	FYE	313	Ld. & Wtr. Cns. Eng.	.....	3
CE	310	Hydraulics I	.....	3	FY	318	Forest Meas. I	.....	4	FY	319	Forest Meas. II	.....	5
U	101	Soc. & Culture	.....	3	FYE	315	Proc. Engr. For. Sys.	.....	5	EHA	404	Tech. Writing	.....	5
FY	301	Dendrology I	.....	4										
		FYE	311	Mob. Equip. Des. Fund.	.....	4								
		CE	430	Intr. Soil Mechanics	.....	4								
		FY	318	Forest Meas. I	.....	4								
		FYE	315	Proc. Engr. For. Sys.	.....	5								
SENIOR YEAR														
FYE	403	App. Struct. An. & Des.	.....	3	FYE	430	Engr. Des. Bio. Syst. I	.....	4	FYE	530	Engr. Bio. Syst. II	.....	4
FYE	402	For. Transp. Syst. Des.	.....	3			Engr. Elective	.....	4	FYE	572	Engr. For. Hv. Sys.	.....	4
FYE	509	Hydr. Cont. Sys.	.....	3			Tech. Elective	.....	3	U	103	Indiv. in Society	.....	3
FY	540	Forest Econ.	.....	4	U	102	Polit. Econ.	.....	3			Tech. Elective	.....	3

#### TOTAL — 210 QUARTER HOURS

Students may obtain a minor in Forest Resources by taking the following additional courses:

(Up to 12 hours toward minor may be taken for technical or free electives in FYE curriculum)

BI 102 Plant Biology ....	5	ENT/PLP 215 Forest Pests ....	4
FY 323 Forest Ecology ....	3 or	FY 444 Forest Fire Control & Use ....	2
FY 523 Silviculture ....	4	FY 463 Forest Recreation Plan. & Mgmt. ....	2
FY541 For. Mgt. & Admin. ....	4 or	ZY 205 Wildlife Conservation ....	3
FY543 Forest Policy ....	3		

TOTAL Additional hours required for MINOR: 23-26

TOTAL Combined: 221-236 Quarter Hours

\*HY 101, 102, 103 may be substituted.

\*\*Select from PA 102 or 219.

\*\*\*Core Fine Arts (see page 39). Select from AR 360, AT 171-173, MU 373-374 or TH 200-201.

\*\*\*\*Six hours of Advanced ROTC may be substituted from six hours of technical electives.



## Forest Resources

The objectives of the Forest Resources curriculum are to provide: (1) fundamental knowledge regarding the resources that professional foresters typically manage and the multiple uses of those resources. (2) a general education integrating physical, social and biological sciences to prepare the forester for his role as a steward of public and private forest resources. (3) training in skills needed for initial forestry employment as well as for advancement to higher levels of managerial responsibility.

### Curriculum in Forest Resources (FYR)

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. .... 5	PS	200 Found. of Phys. .... 5	CH	103L Gen. Chem. Lab. .... 1
BI	101 Prin. Biology .... 5	BI	102 Plant Biology .... 5	CH	103 Fund. Chem. I .... 4
HY	101 World History .... 3	MH	161 An. Geom. & Cal. .... 5	HY	102 World History .... 3
	Core/Fine Arts** ..... 3			U	101 Soc. & Culture .... 3
SOPHOMORE YEAR					
CH	104L Gen. Chem. Lab. .... 1	HY	103 World History .... 3	PA	Core/Philosophy** ..... 5
CH	104 Fund. Chem. II .... 4	AC	215 Fund. G&C Acct. .... 5	FY	220 Comp. App. in For. .... 3
EC	301 Econ. & Bus. Policy .... 5	EH	221 Great Books II .... 5	U	103 Indiv. in Soc. .... 3
EH	220 Great Books I .... 5	U	102 Polit. Econ. .... 3	AY	305 Gen. Soils .... 5

#### SUMMER CAMP

FY	306 Intro. For. Mgt. .... 2
FY	302 Intro. For. Biol. .... 2
FYE	304 For. Surveying .... 5
FY	305 Field Mensuration .... 4
FYE	300 Intro. For. Oper. .... 2

#### JUNIOR YEAR

FY	320 For. Tree Phys. .... 3	FY	318 For. Meas. 1 .... 4	FY	319 For. Meas. II .... 5
BST	215 Bio. Stat. .... 5	EH	Adv. Comp.** ..... 5	FY	323 For. Ecology .... 3
FY	310 Dendrology .... 4	FP	339 Intro. Wood Sci. .... 3	ENT/PLP	215 For. Pests .... 4
	Elective ..... 2		Elective ..... 3	FY	463 For. Rec. P&M .... 2

#### SENIOR YEAR

FY	540 For. Econ. .... 4	FY	541 For. Mgt. & Adm. .... 4	FY	485 For. Mgt. Pract. .... 3
FY	523 Silviculture .... 4	FY	444 Fire Cont./Use .... 2	FY	542 For. Policy .... 3
FY	524 For. Watershed Mgt. .... 2	FYE	570 Harvesting .... 3		Electives ..... 8
	Elective ..... 4	ZY	425 For. Wildlife Mgt.* ..... or		
		ZY	205 Wildlife Consrv. .... 3		
			Elective ..... 3		

**TOTAL — 195 QUARTER HOURS**

\*Depending on choice of minor.

\*\*For University Core options to satisfy these requirements, see page 39.

Optional Minors in Forestry Resources Curriculum

Business — 15 hours: MN 310, MT 331, FI 361

Wildlife — 15 hours: ZY 328, 328L, 528, 528L and 425

## Forestry Operations

The Forest Operations curriculum, like the Forest Resources curriculum, is designed for those interested in careers in forest and land management, but who prefer to focus their career direction to forest-based industries and firms where the primary objective is timber production. This curriculum also provides opportunities in forest products production management, raw material procurement and product marketing and sales.

## Curriculum in Forestry Operations (FYO)

FRESHMAN YEAR														
First Quarter					Second Quarter					Third Quarter				
EH	110 Eng. Comp.	5	PS	200 Found. of Phys.	5	CH	103L Gen. Chem. Lab.	1						
BI	101 Prin. Biology	5	BI	102 Plant Biology	5	CH	103 Fund. Chem. I	4						
HY	101 World History	3	MH	161 An. Geom. & Cal.	5	HY	102 World History	3						
	Core/Fine Arts**	3				U	101 Soc. & Culture	3						
SOPHOMORE YEAR														
CH	104L Gen. Chem. Lab.	1	HY	103 World History	3									
CH	104 Fund. Chem. II	4	AC	215 Fund. G & C Acct.	5	FY	220 Comp. App. in For.	3						
EC	301 Econ. & Bus. Policy	5	EH	221 Great Books II	5	U	103 Indiv. in Soc.	3						
EH	220 Great Books I	5	U	102 Polit. Econ.	3	AY	305 Gen. Soils	5						
SUMMER CAMP														
			FY	306 Intro. For. Mgt.	2									
			FY	302 Intro. For. Biol.	2									
			FYE	304 For. Surveying	5									
			FY	305 Field Mensuration	4									
			FYE	300 Intro. For. Oper.	2									
JUNIOR YEAR														
EH	Adv. Comp.**	5	FY	318 For. Meas. I	4	FY	319 For. Meas. II	5						
BST	215 Bio. Stat.	5	FP	339 Intro. Wood Sci.	3	FY	323 For. Ecology	3						
FY	310 Dendrology	4	FYE	370 For. Rds. Des.	3		ENT/PLP 215 For. Pests	4						
	Electives	4	FP	420 For. Prod. I	4									
SENIOR YEAR														
FY	540 For. Econ.	4	FY	541 For. Mgt. & Adm.	4	FY	482 Wood Procure.	2						
FY	523 Silviculture	4	FYE	570 Harvesting	3	FY	483 Ind. Wd. Pr. Prac.	1						
FP	535 Prod. Mgt. & Cont.	4	FP	521 For. Prod. II	4	FY	542 For. Policy	3						
	Elective	2		Elective	3	FYE	571 Adv. Harvesting	2						
							Elective	6						

## TOTAL — 195 QUARTER HOURS

\*\*For University Core options to satisfy these requirements, see page 39.

Optional Minors in Forestry Operations Curriculum

Business — 15 hours: MN 310, MT 331, FI 361

Wildlife — 15 hours: ZY 328, 328L, 528, 528L and 425

## Honors Program in Forestry

The Honors Program in Forestry provides able students the opportunity to explore in depth areas in which they are interested and to prepare for graduate school. The program is flexible, permitting concentration of effort in areas of the student's choosing.

Students with at least five quarters remaining in the Forest Resources curriculum and with a grade-point average of 2.9 or better may apply for admission to the program.

JUNIOR YEAR								
First Quarter			Second Quarter		Third Quarter			
FY	310 Dendrology .....	4	FY	318 For. Meas. I .....	4	FY	319 For. Meas. II .....	5
BST	501 Bio. Stat. ....	5	EH	400 Adv. Comp. ....	5	FY	323 For. Ecology .....	3
FY	320 For. Tree Phys. ....	3		Elective .....	6		Elective .....	6
	Electives .....	2						
SENIOR YEAR								
FY	540 Forest Econ. ....	4	FY	541 For. Mgt. & Adm. ....	4	FY	485 For. Mgt. Pract. ....	3
FY	523 Silviculture .....	4	FY	499 Honors Project .....	2-5		Electives .....	12
	Electives .....	6		Elective .....	5-8			

## TOTAL — 195 QUARTER HOURS

Twenty-five hours of electives are to be chosen under the supervision of the faculty advisor so as to develop a distinct program leading to a pre-determined goal. All other elective hours are free.

# School of Human Sciences

JUNE M. HENTON, Dean  
ARTHUR W. AVERY, Associate Dean  
DOROTHY H. CAVENDER, Assistant Dean  
PAULETTE P. HILL, Assistant Dean

HUMAN SCIENCES is a professional program drawing on a foundation from the natural and social sciences, the arts and humanities. It integrates and interrelates knowledge from these disciplines to promote the well-being of individuals and families. The course of study provides students with a broad liberal education, specialized career preparation, as well as a background for individual and family living. Areas of specialization focus on many aspects of environment, health and human development. Human Sciences offers men and women professional and pre-professional preparation for a variety of careers available in education, business, industry, social agencies and government.

Programs of study leading to the Bachelor of Science degree can be planned within six curricula in the School of Human Sciences. These curricula are designed with flexibility to meet the needs of students with varying interests. The School includes the Departments of Consumer Affairs, Family and Child Development and Nutrition and Foods.

**Graduation Requirements:** To earn the bachelor's degree from the School of Human Sciences, students must complete the hours and subject matter requirements of their curricula and must have a minimum cumulative grade-point average of 2.0 on all coursework attempted at Auburn University, and in addition, a 2.0 cumulative GPA on all work attempted in the major.

Transfer credit will not normally be allowed for any course passed with a grade lower than C at any other college or university.

## Department of Consumer Affairs

The Department of Consumer Affairs focuses on the near physical environment and consumer's interaction with this environment. Three majors are offered in this department: Apparel and Textiles; Fashion Merchandising; and Interiors and Housing. These curricula lead to careers in business and government which apply design principles, science and technology to the study of consumer needs, to evaluate consumer products and to inform consumers of the findings.

### Apparel and Textiles

Apparel and Textiles is a professional curriculum with four options providing preparation and specialization related to students' professional goals. Diversity within the major allows students to select among such varied fields as apparel and textile design, fashion promotion, fashion journalism, apparel production management, consumer-producer relations and textile science. Located in the heart of the textile and apparel industry, a unique interdisciplinary structure exists between Apparel, Textiles, Textile Engineering, the College of Business, the Agricultural Experiment Station (research) and the Cooperative Extension System on the campus.

Admission of majors to the Textile Design option of this curriculum is temporarily suspended.

### Curriculum in Apparel and Textiles (APT)

Options\*: Apparel Design, Apparel Production Management,  
Textile Design and Textile Science

#### Curriculum Core — 99 hours

FRESHMAN YEAR														
First Quarter					Second Quarter					Third Quarter				
MH	160 Pre-Cal. w/Trig.	5	CH	103 Fund. of Chem. I	4	CH	104 Fund. of Chem. II	4						
CA	115 Cloth. & Cult.	3	CH	103L Gen. Chem. Lab.	1	CH	104L Gen. Chem. Lab.	1						
EH	110 Eng. Comp.	5	CA	116 Art for Liv.	3	FCD	157 Fam. Hum. Dev.	3						
	Core/History **	3	CA	116L Art for Liv. Lab.	2		Core/History **	3						
	Electives *	2		Core/History **	3		Electives *	6						
				Electives *	2									
SOPHOMORE YEAR														
CH	203 Org. Chem. ***	5	EH	220 Great Books I	5	U	103 Indiv. in Soc.	3						
	Electives *	6	U	102 Polit. Econ.	3	FCD	200 Mgt. for Cons.	4						
NF	200 Nutr. & Hlth.	3		Electives *	10		Core/Fine Arts **	3						
U	101 Soc. & Cult.	3					Electives *	2						
							EH	221 Great Books II	5					

# School of Human Sciences

## JUNIOR YEAR

CA 305 Textiles .....	5	EC 301 Econ. Prin. & Bus. Pol. ....	5	Electives * .....	17
EH Core/Philosophy ** .....	5	Foreign Lang. **** .....	5		
EH Adv. Comp. ** .....	5	Electives * .....	8		
Electives * .....	3				

## SENIOR YEAR

Electives * .....	18	Electives * .....	18	Electives * .....	18
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## TOTAL — 204 QUARTER HOURS

\*Students focus on one of four options, taking 33-77 hours specified professional courses, 18-56 approved professional electives and 10-16 hours of free electives.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*Students in the Textile Science option omit CH 203 and take CH 207, 207L.

\*\*\*\*Satisfactory completion of the third course in the 100-level in any foreign language sequence.

Ten hours of free electives are reserved for students who must take the entire 100-level sequence to meet the foreign language requirement. Students who plan to complement their academic program with 12 hours of ROTC coursework must first use free elective hours if those hours are not needed to meet the foreign language requirement, and the remaining hours needed may be taken from the professional category. If the free electives must be used for foreign language, students may use a maximum of 12 hours from the professional electives toward ROTC coursework.

## Fashion Merchandising

Fashion Merchandising prepares majors for such positions as buyer or assistant buyer, comparison shopper, fashion stylist or coordinator, merchandise manager, fashion promoter, product developer or a store owner-manager. Ten weeks of retail training is included in the fashion merchandising curriculum.

## Curriculum in Fashion Merchandising (FM)

### FRESHMAN YEAR

MH 160 Pre-Cal. w/Trig. ....	5	CH 103 Fund. of Chem. I .....	4	CH 104 Fund. of Chem. II .....	4
CA 115 Cloth. & Cult. ....	3	CH 103L Gen. Chem. Lab. ....	1	CH 104L Gen. Chem. Lab. ....	1
EH 110 Eng. Comp. ....	5	CA 116 Art for Liv. ....	3	CA 140 App. Prod. I .....	4
Core/History ** .....	3	CA 116L Art for Liv. Lab. ....	2	CA 226 Fash. Sketch. ....	3
Elective .....	1	Core/History ** .....	3	Core/History ** .....	3
		FCD 157 Fam. & Hum. Dev. ....	3	Elective .....	1
		Elective .....	1		

### SOPHOMORE YEAR

CH 203 Org. Chem. ....	5	U 102 Polit. Econ. ....	3	CA 201 Ret. Pricing .....	3
EC 200 Econ. I .....	5	EC 202 Econ. II .....	5	AC 211 Prin. of Acct. I .....	4
U 101 Soc. & Cult. ....	3	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
NF 200 Nutr. & Health .....	3	CA 205 Tax. App. Prod. ....	3	U 103 Indiv. in Soc. ....	3
Elective .....	1	Elective .....	1	Elective .....	1

### JUNIOR YEAR

FCD 200 Mgt. for Cons. ....	4	CA 316 Fash. Analysis .....	5	Core/Fine Arts ** .....	3
EH Adv. Comp. ** .....	5	MT 333 Merch. Mgt. ....	5	CA 305 Textiles .....	5
MT 331 Prin. of Mkt. ....	5	CA 334 Intro. to Intern. ....	2	CA 325 Fash. Merch. ....	5
Foreign Lang. * .....	5	Core/Philosophy ** .....	5	Prof. Electives .....	5

### SENIOR YEAR

CA 525 Hist. of Costume .....	5	CA 516 App. Qual. Eval. ....	5	CA 435 Intern. in Ret. ....	13
Prof. Electives .....	10	CA 521 Tde., Prod. & Dist. ....	4		
Electives .....	4	CA 535 Text. Testing .....	5		
		Prof. Electives .....	4		

## TOTAL — 204 QUARTER HOURS

\*Satisfactory completion of the third course in the 100-level in any foreign language sequence.

\*\*For University Core options to satisfy this requirement, see page 39.

Ten hours of free electives are reserved for students who must take the entire 100-level sequence to meet the foreign language requirement. Students who plan to complement their academic program with 12 hours of ROTC coursework must first use free elective hours if those hours are not needed to meet the foreign language requirement, and the remaining hours needed may be taken from the professional category. If the free electives must be used for foreign language, students may use a maximum of 12 hours from the professional electives toward ROTC coursework.

### PROFESSIONAL ELECTIVES

Eight to 12 hours selected from among: CA 206, 206L, 340, 395, 399, 478, 505, 511, 511L, 515, 520, 523, 524, 538.

Eight to 12 hours from: AC 212; MN 207, 274, 310, 342, 346; MT 241, 242, 332, 337, 341, 440; SY 505. Any adjustable course.

## Special Focus in International Retailing

Students desiring a Special Focus in International Retailing should select the following courses as Professional Electives: MT 341, MT 440, and CA 538. CA 435 (internship) should be done in Europe, Asia or Latin America. Some foreign language courses may also be used for professional electives.

## One-Year Transfer Programs

Qualified students in Apparel and Textiles or Fashion Merchandising may apply for one-year transfer programs to be taken during the junior year. Programs are available with the Fashion Institute of Technology in New York in apparel and textile design or merchandising and the Southern Technical College in Marietta, Ga. in apparel engineering. Transfer programs are planned with an advisor so that transfer credits meet Auburn curriculum requirements while the student earns an Associate Degree from the transfer institution. For further information, contact the head of the Department of Consumer Affairs.

### One-Quarter Internship Programs

Students majoring in Fashion Merchandising, Interiors and Housing, or the Apparel Design and Apparel Production Management Options of the APT curriculum are required to arrange an internship away from campus during one quarter of the senior year. To earn credit, internship site and work-study program must be approved by the student's advisor.

### Interiors and Housing

Professional career opportunities for graduates in Interiors and Housing include designing, merchandising and consulting positions with retailers, manufacturers, public utilities and cooperative extension. A professional option for Kitchen and Bathroom Specialists is available through the IH curriculum and is endorsed by the National Kitchen and Bath Association.

### Curriculum in Interiors and Housing (IH)

FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter		
MH 160 Pre-Cal. w/Trig.....	5	CA 116L Art for Liv. Lab.....	2	CA 121 Spat. Anal.....	3
CA 116 Art for Liv. I.....	3	FCD 157 Fam. Hum. Dev.....	3	NF 200 Nutr. & Health.....	3
EH 110 Eng. Comp.....	5	Core/History **.....	3	FCD 200 Mgt. for Cons.....	4
Core/History **.....	3	Core/Philosophy *.....	5	Core/History **.....	3
Elective.....	1	Science ***.....	5	Science ***.....	5
		Elective.....	1	Elective.....	1
SOPHOMORE YEAR					
EH 220 Great Books I.....	5	BSC 200 Draw. & Proj.....	3	U 103 Indiv. in Soc.....	3
CA 220 Cons. Housing.....	3	EH 221 Great Books II.....	5	CA 222 Furn. for Int.....	4
CSE 100 Intro. PC App.....	3	CA 255 Tex. for Inter.....	3	CA 224 Fund. Vis. Pres.....	2
U 101 Soc. & Cult.....	3	CA 221 Res. Sp. Plan.....	4	CA 215 Sur. of Dec. Arts.....	5
Core/Fine Arts ****.....	3	U 102 Polit. Econ.....	3	Prof. Electives.....	4
Elective.....	1	Elective.....	1	Elective.....	1
JUNIOR YEAR					
CA 223 Interiors.....	4	CA 333 Light. Des.....	5	CA 353 Bus. Prac. in Furn.....	5
CA 233 Res. Eq./Eng. Mgt.....	4	MT 331 Prin. of Mkt.....	5	CA 424 Non-Res. Inter.....	4
EHA 408 Bus. & Prof. Writ.....	5	CA 324 Adv. Vis. Pres.....	3	CA 363 Env. Syst/Mgt.....	3
AC 211 Accounting I.....	4	Prof. Electives.....	4	CA 478 Vis. Merch.....	3
SENIOR YEAR					
CA 422 Kit. & Bth. Plan.....	4	CA 423 Res. Interiors.....	4	CA 436 Internship.....	13
EC 301 Ec. Prin. & Bus. Pol.....	5	CA 513 Hs. for Spec. Nds.....	4		
Prof. Electives.....	6	Prof. Electives.....	5		
		Electives.....	3		

### TOTAL — 204 QUARTER HOURS

\*Select one of the following: PA 101, 102 or 219.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*Select one of the following sequences: BI 105 and 106 or 107; or CH 103, 103L, 104, 104L.

\*\*\*\*Select one of the following Art Histories: AT 171, 172 or 173.

Students may use nine hours of free electives and a maximum of three hours from professional electives toward 12 hours of ROTC coursework.

### SUGGESTED PROFESSIONAL ELECTIVES

**Business and Consumer Orientation** (minimum of eight hours): ACF 212; CP 524, 545; MN 310; MT 241, 242, 332, 333, 341, 347; CA 431, 514; FCD 528; FI 361.

**Applied Design** (minimum of six hours): HF 225, 226; AT 101, 102, 103, 104, 105, 111, 112, 113, 121, 122, 123; FP 370; BSC 203; CA 216, 490A.

**Design Support** (minimum of five hours): BSC 202; AT 370, 371, 372, 373, 374, 375, 376, 377, 378, 379; AR 261, 262, 263, 360; PG 465; HF 221, 412; CA 399, 515, 580D; CP 525, 527; FP 301, 302, 339.

### Specialization in Kitchen and Bath

Students who desire a Specialization in Kitchen and Bath Design must complete professional electives requirements (20 hours) from the following: 10 hours from BSC 202, 203, CA 490 (Independent Study in CAD) and 10 hours from AC 212, MN 310, MT 241, 333, 347 and FI 361. CA 436-Internship in Interiors and Housing (13 credit hours) must be completed with a Kitchen and/or Bath Design firm. Completion of the Kitchen and Bathroom Specialization prepares the graduate to take the certification examination conducted by the Society of the National Kitchen and Bath Association. This professional option within the IH curriculum is endorsed by the National Kitchen and Bath Association.

### Department of Family and Child Development

The Department of Family and Child Development is concerned with the integration of knowledge from various fields for the purpose of studying individuals and families across the lifespan. The department offers a course of study to prepare students for a variety of careers, including teaching and administering programs for young children, adolescents and adults; parent education; mental health or family financial counseling; and Cooperative Extension. One undergraduate curriculum, including three options, is offered by the department. These options are: Infancy and Preschool, School-age and Adolescence and Adult and Aging.



## Curriculum in Family and Child Development (FCD)

Options: Infancy and Pre-school, School-age and Adolescence, Adult and Aging.

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	BI	105 Pers. in Bio.	5	BI	106 Hum. Biol.	5
FCD	157 Fam. Hum. Dev.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
U	101 Soc. & Cult.	3	HY	Core/History **	3	PA	Core/Philosophy **	5
HY	101 Core/History **	3		Electives	5	HY	Core/History **	3
	Elective	1					Elective	1
SOPHOMORE YEAR			SOPHOMORE YEAR			SOPHOMORE YEAR		
EH	220 Great Books I	5	EH	221 Great Books II	5	NF	200 Nutr. & Health	3
FCD	200 Mgt. for Cons.	4	CA	116 Art for Liv.	3	SY	201 Sociol.	or
FCD	267 Hum. Dev. I	5	FCD	269 Mate Select.	4	PG	211 Psychology	3-5
FCD	287 Careers	2	FCD	280 Hum. Dev. II	4	MH	Core/Math **	5
	Elective	1		Elective	1		Core/Fine Arts **	3
							Elective	1
JUNIOR YEAR			JUNIOR YEAR			JUNIOR YEAR		
FCD	306 Fam. Interact.	4	FCD	301 Hum. Dev. III	5	FCD	308 Rel. Comp.	3
EH	404 Tech. Writ.	or		Prof. Electives	8	FCD	477 Hum. Dev. V	3
EH	408 Bus. & Prof. Writ.	5		Electives	2		Prof. Electives	8-10
SY	220 Stat. ***	or						
PG	315 Quant. Meth.	5						
SENIOR YEAR			SENIOR YEAR			SENIOR YEAR		
FCD	304 Hum. Sexuality	4	FCD	420 Rec. Research	4	FCD	497 Internship ***	5-15
FCD	302 Hum. Dev. IV	4		Electives	10		Prof. Electives	0-8
	Prof. Electives	2						
	Electives	4						

## TOTAL — 185 QUARTER HOURS

\*Students focus on one of three options by taking 16-28 hours of specialized professional electives and 5-15 hours directed internship.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*MN 207 or CSE 204 may be substituted for the Statistics requirement by student who will focus their internship on the consumer and family economics area.

\*\*\*\*Credit hours for Curriculum Requirements for Major (i.e., departmental major courses, required supporting courses and required professional electives) must total 85. The Internship Handbook contains information regarding recommended professional electives for specific Internship types.

A maximum of 12 hours of free electives may be used toward basic and advanced ROTC coursework.

## Department of Nutrition and Foods

The Department of Nutrition and Foods offers two majors which integrate knowledge from the biological and sociological sciences. The major in Nutrition and Food Science with options in Nutrition (Plan V/Dietetics) and Food Science focuses on the application of scientific principles for optimal nutritional health of individuals and the relationship to food supply and food choices that people make. The Hotel and Restaurant Management program emphasizes food and lodging services for consumers in the tourism industry. These curricula lead to a variety of careers in health care, business and industry, government and education.

## Hotel and Restaurant Management

The Hotel and Restaurant Management major prepares students for careers in hotels, motels, restaurant facilities and other positions in the tourism and hospitality industry. The program is structured to address the needs of the premium service segment of the hospitality industry. The mission of the program is to educate men and women in the arts and sciences of hospitality management from a multi-cultural perspective, to prepare them with a thorough understanding of the premium service concept in hotels, restaurants and clubs and to instill in them high standards of excellence for the performance of their professional responsibilities.

## Curriculum in Hotel and Restaurant Management (HRM)

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
EH	110 Eng. Comp.	5	PA	218 Bus. Ethics	5	NF	200 Nutr. & Health	3
MH	160 Pre-Cal. w/Trig.	5	CSE	100 Intro. PC	3	FCD	157 Fam. & Hum. Dev.	3
HRM	101 Intro. Hosp. Mgt.	2		Core/History **	3	FCD	200 Mgt. for Cons.	4
	Core/History **	3		Core/Fine Arts **	3	COM	100 Prof. Comm.	3
				Electives*	3		Core/History **	3

# School of Human Sciences

## SOPHOMORE YEAR

U 101 Soc. & Culture .....	3	U 102 Polit. Econ. ....	3	MB 201 Pers. in Microbiol. ....	5
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	U 103 Indiv. in Soc. ....	3
BI 105 Pers. in Biol. ....	5	BI 106 Hum. Biol. ....	5	NF 202 Prin. Fd. Prep. ....	5
AC 211 Accounting I .....	4	AC 212 Accounting II .....	4	MT 255 Leg./Soc. Env. ....	5

## JUNIOR YEAR

EH 404 Tech. Writ. .... or		MT 331 Prin. of Mkt. ....	5	ADS 270 Com. Meat Mgt. ....	5
EH 408 Bus. Prof. Writ. ....	5	HRM 320 Hosp. Fin. Mgt. ....	4	HRM 340 Hosp. Mkt. ....	3
NF 304 Quan. Fd. Prep. ....	5	HRM 330 Hosp. Law ....	4	MT 341 Buyer Behav. ....	5
EC 301 Ec. Prin. & Bus. Pol. ....	5	MN 310 Prin. of Mgt. ....	5	GY 320 Int. Travel ....	3
CA 116 Art for Liv. ....	3				

## SENIOR YEAR

HRM 410 Rest. Mgt. ....	3	HRM 470 Adv. Rest. Mgt. ....	3	HRM 480 Adv. Bev. Mgt. ....	3
HRM 460 Adv. Serv. Mgt. ....	4	HRM 450 Hotel Mgt. ....	4	HRM 490 Prof. Intern. ....	5
MT 440 Int. Mkt. ....	5	COM 340 Com. in Orgs. ....	5	FI 361 Prin. Bus. Fin. ....	5
Prof. Electives * .....	6	MN 342 Hum. Res. Mgt. .... or		Electives ** .....	3
		MN 348 Org. Behav. ....	5		

## TOTAL — 203 QUARTER HOURS

\* Students may substitute a maximum of six hours of free electives and six hours of professional electives for the basic and advanced ROTC coursework.

\*\* For University Core options to satisfy this requirement, see page 39.

## Nutrition and Food Science

Nutrition and Food Science is a curriculum with two options which permit specialization according to students' personal interests. The Nutrition (Plan V/Dietetics) option prepares students for careers in dietetics, nutrition and nutrition education programs. Career opportunities for graduates include positions with hospitals, nursing homes, food services and food service management companies.

The Food Science option prepares students for positions in the foods industry. Through electives, majors may focus on the business, communications, consumer education or retailing aspects of the foods industry.

## Curriculum in Nutrition and Food Science (NFS)

Options: Nutrition (Plan V/Dietetics) and Food Science

### Curriculum Core — 110 Hours

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 160 Pre-Cal. w/Trig. ....	5	CH 103 Fund. of Chem. I .....	4	CH 104 Fund. of Chem. II .....	4
BI 101 Biology .....	5	CH 103L Gen. Chem. Lab. ....	1	CH 104L Gen. Chem. Lab. ....	1
NFS 200 Nutr. & Health .....	3	EH 110 Eng. Comp. ....	5	CA 116 Art for Liv. ....	3
Core/History ** .....	3	FCD 157 Fam. & Hum. Dev. ....	3	COM 100 Prof. Comm. ....	3
Elective * .....	1	Core/History ** .....	3	Core/History ** .....	3
		Elective * .....	1		

#### SOPHOMORE YEAR

CH 203 Org. Chem. ....	5	FCD 200 Mgt. for Cons. ....	4	U 103 Indiv. in Soc. ....	3
NFS 202 Food Prep. ....	5	Electives * .....	6	Electives * .....	12
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5		
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3		

#### JUNIOR YEAR

NFS 318 Nutr. Biochem. ....	4	Electives * .....	17	MB 300 Microbiology .....	5
NFS 318L Nutr. Bioch. Lab. ....	1			Electives * .....	12
EH 404 Tech. Writ. ....	5				
Electives * .....	5				

#### SENIOR YEAR

NFS 564 Exper. Foods .....	5	Electives * .....	11	Core/Fine Arts ** .....	3
CSE 100 Comp. Appl. ....	3	PA Core/Philosophy ** .....	5	Electives * .....	13
Electives * .....	8				

## TOTAL — 196 QUARTER HOURS

\* Student focus on one of two options taking 53-61 hours specified required courses, 13-21 hours of professional electives and 12 free electives.

\*\* For University Core options to satisfy this requirement, see page 39.

A maximum of 12 hours of free electives may be used toward the basic and advanced ROTC coursework.

**Nutrition (Plan V/Dietetics) Option:** Students in Nutrition (Plan V/Dietetics) option are required to take the following 74 hours of coursework: SY 280; ZY 250, 251; EC 301; MN 310; NFS 304, 307, 346, 362, 382, 392, 502, 592.

American Dietetic Association Plan V educational requirements will be met by the Nutrition option. The program is approved by the American Dietetic Association. Graduates choosing this option are required to complete an additional supervised practice experience in order to be eligible to take the national examination to become a Registered Dietitian.

**Food Science Option:** Students in Food Science option are required to take the following 66 hours of coursework: MH 161; BI 102, 103; PS 200; BST 215; AEC 200; NFS 201, 372, 429, 543, 545, 577; HF 340; AN 355; MB 556. This option meets the Institute of Food Technology educational requirements for scholarship eligibility.

## Certificate in Aging Studies

The Certificate in Aging Studies is a multidisciplinary program designed for students interested in problems of aging persons which will give them a general competency in gerontology. The career-oriented option complements a student's major field of study and, upon completion of the 25 hours, lead to a Certificate in Aging Studies. The program is open to all students who choose to use their elective hours in this manner. Interested students should contact the academic advisors in their school and the School of Human Sciences for further details concerning the program. The required courses (25 credit hours) and their prerequisites are as follows:

PG 302 Psych. Aspects of Death & Dying .....	3
*RSY 371 Applied Res. Meth. & Prog. Eval. ....	3
ZY 360 Physiology of Aging (Pr. BI 101) .....	3
FCD 477 Hum. Dev. V: Family & Aging (Pr. FCD 306) .....	3
SY 477 Soc. of Aging (Pr. SY201) .....	3
PG 507 Maturity & Aging (Pr. PG 212 or FCD 267) .....	5
FCD 497F Internship: Aging (Pr. FCD 287) .....	

or

Special Problems Course offered in student's major department (must incorporate Aging Studies in some way) .....	5
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\*RSY 370 (5), Methods of Social Research or a statistics or research course required by the student's major area may be substituted. Credit will not be given for both RSY 371 and RSY 370 or SY 370.

## Dual Objective Program with the College of Education

Dual objective programs with the College of Education are open to students registered in the School of Human Sciences in the following four majors:

Family and Child Development	Nutrition and Foods
Apparel and Textiles	Interiors and Housing

## Options in Cooperative Extension

Students enrolled in any of the majors in the School may prepare for a career in the Cooperative Extension Service through selection of certain courses as electives. Majors may fulfill the requirements of the Alabama Cooperative Extension System through scheduling of the following courses:

NF 200, 202, 204, 324, 362	CA 140, 206, 222, 233, 255 or 305
FCD 467, 541	EM 200

## Graduate Work

The School offers work leading to the Master of Science degree, Master of Arts in College Teaching degree and Ph.D. degree in Family and Child Development and Nutrition, an interdepartmental program.

# College of Liberal Arts

David R. Hiley, *Acting Dean*

IN THE COLLEGE OF LIBERAL ARTS a student can specialize in a particular field while also gaining a broad general education. Four academic areas — humanities, fine arts, communications and social sciences — are represented by the College's 15 departments: Art; Communication; Communication Disorders; English; Foreign Languages; Geography; History; Journalism; Music; Philosophy; Political Science; Psychology; Religion; Sociology, Anthropology and Social Work; and Theatre.

Besides affording specialization in majors, the curricula of this College lay a strong foundation for further studies in graduate school or professional school. The College also provides courses which are needed by students of all other instructional divisions of the University.

## Undergraduate Degrees

Academic majors, programs, and options are offered in forty-five fields, described below in the **Liberal Arts Curriculum** and in the curricula of the **School of Fine Arts**. Four-year degrees offered by the College in these fields are the Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, and Bachelor of Music.

## Graduate Degrees

Doctor of Philosophy degrees are offered in English, history, psychology and public administration. Master of Arts degrees are offered in English, French, Spanish, history, political science, sociology and communication. Master of Science degrees are offered in communication disorders and psychology.

The designated degrees of Master of Communication Disorders, Master of French Studies, Master of Hispanic Studies, Master of Communication, and Master of Public Administration are offered. The College's School of Fine Arts offers Master of Fine Arts and Master of Music degrees. The College participates in offering an interdisciplinary degree, Master of Arts in College Teaching. Degree programs are described in the *Graduate School Bulletin*.

## Education

The College of Education offers a Fifth Year Program to Liberal Arts students holding a baccalaureate degree in communication, economics, English, geography, history, music, political science, psychology or sociology. Upon successful completion of the program, a master's degree in Education (M.Ed.) will be awarded and the graduate will be recommended for an A level teaching certificate (master's level certificate).

## The University Honors Program

This program offers individual learning opportunities, the possibility of accelerated entry into a master's program, and participation in honors courses to entering freshmen with extraordinarily high academic aptitude.

## Cooperative Education Programs

Cooperative Education Programs which give students an opportunity to integrate their academic training with work experience are offered in art, criminal justice, journalism, mass communication, political science, pre-law, psychology, public relations and sociology. Students alternate each quarter between college and a work assignment provided through the Director of the Cooperative Education Program.

## Center for the Arts and Humanities

The Auburn University Center for the Arts and Humanities conducts history and heritage programs for the general public in localities throughout the state. For information, contact Dr. Leah Rawls Atkins, Director, in the Center's offices at Pebble Hill.

## Curriculum in Liberal Arts

FRESHMAN YEAR									
EH	110 English Composition .....	5	PA	101 Intro. to Logic .....	5		Core/Mathematics .....	5	
FL	First Year .....	5	FL	First Year .....	5	FL	First Year .....	5	
HY	101 World History * .....	3	HY	102 World History * .....	3	HY	103 World History * .....	3	
U	101 Society & Culture .....	3	U	102 Political Economy .....	3	U	103 Indiv. & Society .....	3	
SOPHOMORE YEAR									
	Ethics or Religion .....	5	EH	220 Great Books I .....	5	EH	221 Great Books II .....	5	
	Core/Science ** .....	5		Core/Science ** .....	5		Major .....	5	
PO	209 Intro. Am. Gov't .....	5		Social Science ** .....	3		Support Course .....	5	
COM	100 Pro. Com. ....	3		Core/Fine Arts ** .....	3				

\* Alternates are HY 121-122-123, Technology & Civilization; and U 270-271-272, Human Odyssey, except no alternates for History Major.

\*\* One science concepts course and one core science course or both may be core science courses. See specifications in descriptions of majors, below.

\*\*\* A course in anthropology, geography, psychology, or sociology. See descriptions of majors, below.

For University Core options to satisfy these requirements, see page 39; and see descriptions of majors, below.

## JUNIOR AND SENIOR YEARS

During the junior and senior years the student is to complete major requirements of 45-70 hours (including two designated writing reinforcement courses); courses specified in support of the major; one second core composition; and electives. Electives may include six hours Basic ROTC and six hours Advanced ROTC. In majors which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses not in the University or College core to be selected with help of departmental advisor.

## TOTAL-192 QUARTER HOURS

In Health Services Administration and Health Systems Administration, 201 hours required.

## Majors in the Liberal Arts Curriculum

A major may be declared at the time of admission or thereafter but must be declared by the end of the quarter in which the student has completed 80 quarter hours credit, including transfer and all other credit. A student transferring into the college with 80 or more quarter hours credit must declare a major upon admission. Before a major is declared, a student will follow the requirements of the Liberal Arts Curriculum and will be identified by the symbol CLA.

Bachelor of Arts: Anthropology, Art, Communication, Corporate Journalism, Criminal Justice, Criminal Justice/Pre-Law, Criminal Justice/Spanish, Criminology, Economics, English, Foreign Languages-International Trade, French, Geography, German, History, Journalism, Latin American Studies, Mass Communication, Music, Philosophy, Political Science, Psychology, Public Administration, Public Relations, Religion, Russian Studies, Social Work, Sociology, Spanish, Spanish and Social Work and Theatre.

Bachelor of Science: Communication Disorders, Health Services Administration and Health Systems Administration.

## Symbols for Majors in the Liberal Arts Curriculum

Undeclared ..... CLA

Anthropology .....	ANT	Health Services Administration .....	HSM
Art .....	ATLA	History .....	HY
Communication .....	COM	Journalism .....	JM
Communication Disorders .....	CD	Latin American Studies, Geography .....	GYL
Corporate Journalism .....	JMC	Latin American Studies, History .....	HYL
Criminal Justice, Law Enforcement .....	CJL	Latin American Studies, Political Science .....	POL
Criminal Justice, Offender Rehabilitation .....	CJO	Latin American Studies, Spanish .....	SPL
Criminal Justice, Youth Services .....	CJY	Mass Communication .....	RTF
Criminal Justice, Pre-Law .....	CJPL	Music .....	MULA
Criminal Justice, Spanish .....	CJSP	Philosophy .....	PA
Criminology .....	CR	Political Science .....	PO
Economics .....	ECLA	Psychology .....	PG
English .....	EH	Public Administration .....	PUB
Foreign Languages-Intern'l Trade, French .....	FRT	Public Relations .....	PR
Foreign Languages-Intern'l Trade, German .....	GRT	Religion .....	RL
Foreign Languages-Intern'l Trade, Spanish .....	SPT	Russian Studies .....	RUS
French .....	FR	Social Work .....	SW
Geography .....	GY	Sociology .....	SOC
German .....	GR	Spanish .....	SP
Health Services Administration .....	HSA	Theatre .....	THLA

## Minors

There is not a College-wide requirement to take a minor. If a department requires students in its major to take a minor, or if a student elects to declare a minor, the minor will total at least 20 hours at the 200-level or above. A minor may be declared in any subject offered in the University except those restricted to students who are registered in the offering departments' degree



programs. While minors are available in all subjects in the College of Liberal Arts, seven areas specify the content of declared minors, as follows:

**Art Minor.** In an exception to the College rule, 100-level courses may be included in this minor.

**Latin American Studies Minor.** This minor requires 30 hours, chosen from courses in Agricultural Economics, Anthropology, Art, Economics, Geography, History, Political Science, Religion, Sociology, and Spanish. See Director of Latin American Studies for list of courses.

**Music Minor.** In an exception to the College rule, 100-level courses are included in this 32 hour minor:

MU 131 Mat. & Org. MU .....	5	MU 132 Mat. & Org. MU .....	5	MU 133 Mat. & Org. MU .....	5
MU 351 MU History .....	3	MU 352 MU History .....	3	MU 353 MU History .....	3
MU 184 Performance .....	2	MU 361 Conducting .....	2		

Students must enroll in MU 100, Convocation (no credit), during the six quarters enrolled in MU 184.

**Philosophy Minor.** Prerequisites: PA 101 Intro. to Logic (5), PA 102 Intro. to Ethics (5), OR PA 218 Ethics & Health Sciences (5) OR PA 219 Business Ethics (5)

The student will choose 20 hours, 15 of which must be at or above the 300 level.

**Russian Studies Minor.** See description under Russian Studies Major, below.

**Theatre Minor.** The minor includes the nine courses listed for the Theatre Major, excluding History of Theatre. This minor requires 26 hours.

**Women's Studies Minor.** Interdisciplinary. This minor requires 30 hours, chosen from the following courses:

ANT 313 Status of Women .....	5	ANT 524 Spec. Top. Anthro. ....	1-5	ANT 550 Dir. Reading .....	1-5
EH 383 Women in Literature .....	3	FCD 304 Human Sexuality .....	4	FCD 568 Gender Roles .....	3
FL 427 Ind. Work in French .....	3-5	FL 501 Dir. Readings .....	1-5	FL 502 Sem. Wom. Authors .....	3
HY 325 Women in U.S. to 1870 .....	3	HY 326 Wom. in U.S. since 1870 .....	3	PO 503 Con. Law III .....	5
PG 420 Psych. of Women .....	5	PG 444 Psych. of Sex. Behav. ....	5		
SY 510 Women in CJ Sys. ....	5SW	320 SW Field Practicum .....	1-5		

## Options

**Aging Studies.** The Certificate in Aging Studies is a multidisciplinary program designed for students interested in problems of aging persons which will give them a general competency in gerontology. The career-oriented option complements a student's major field of study and, upon completion of the 25 hours, leads to a Certificate in Aging Studies. The program is open to all students who choose to use their elective hours in this manner. Interested students should contact the Office of the Dean.

**Engineering.** This program provides for enrollment in the Liberal Arts Curriculum for approximately three academic years and in the College of Engineering for approximately two academic years. Two degrees will be awarded: a bachelor of arts degree in the Liberal Arts major and a bachelor's degree in the designated Engineering field.

**Pre-Law.** Most majors and curricula are accepted as preparation for the study of law. Courses deemed useful, and which may be taken as electives, in majors, in minors, and in some cases to fulfill certain core requirements, are as follows:

AC 215 Fund. of G&C Acct. ....	5	COM 100 Prof. Comm. ....	3	COM 370 Arg. Discourse .....	5
EC 200 Economics I .....	5	EC 202 Economics II .....	5	EH 400 Adv. Composition .....	5
HY 306 Contemp. History .....	3	HY 571 Hist. of Mod. England .....	5	HY 572 Hist. of Mod. England .....	5
PO 501 American Con. Law I .....	5	PO 502 American Con. Law II .....	5		
PG 435 Abnormal Psych. ....	5	PG 211 Psychology .....	5		

Most accredited professional law schools require for admission a bachelor's degree, an excellent scholastic record, and an excellent score on the Law School Admission Test (LSAT). The LSAT should be taken at least nine months ahead of the projected date of law school entrance. The College of Liberal Arts conducts a Pre-Law Program to provide advice on preparing for the study of law and for law school admission. The interested student should confer with the Director of Pre-Law during orientation sessions prior to entering Auburn and regularly thereafter.

## Majors

## Anthropology Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp.** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 Concepts of Sci. ....	5	BI 105 Persp. in Biology .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
SY 201 Intro. to Sociology .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

ANT 200 Biosocial Background .....	3	ANT 201 Cultural Framework .....	3	ANT 206 Cultural Anthropol. ....	5
ANT 207 Archaeology .....	5	ANT 306 Phys. Anthropology .....	5	ANT 511 Lang. and Cult. ....	5
ANT 599 Senior Thesis .....	3	ANT 303 or 403 .....	5	ANT Electives .....	15

Hours in major, 49.

## SUPPORTING COURSES

BI 106 Human Biology .....	5	SY 370 Meth. of Soc. Research .....	5	or
SY 220 Statistics .....	5	RSY 370 Meth. of Soc. Research .....	5	

Other: A 20-hour minor in subject of student's choice. Electives, 16 hours.

TOTAL HOURS REQUIRED, 192

## Art Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp.** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts (MU or TH) ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

## Prerequisites:

AT 111-2-3 Fund. Draw. ....	4-4-4	AT 121-2-3 Fund. Degrn. ....	4-4-4	AT 171-2-3 Hist. of Art ....	3-3-3
Any six (6) courses from the following with at least one course in three (3) different sequences:					
AT 211-212-213 Figure Drawing .....	4-4-4	AT 231-232-233 Painting .....	4-4-4		
AT 241-242-243 Printmaking .....	4-4-4	AT 251-252-253 Sculpture .....	4-4-4		
Three (3) 200/300/400-level studio courses .....	4-4-4	Three (3) 300-level art history courses .....	3-3-3		

Hours in major, 45.

Other: Electives, 22 hours.

TOTAL HOURS REQUIRED, 192

## Communication Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp.** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

RTF 230 Fnd. of Mass Comm. ....	5	COM 250 Fnd. of Hum. Comm. ....	5	COM 260 Fnd. Rhet. & Soc. ....	5
Two of these:					
COM 310 Sp. Before Aud. ....	5	COM 320 Oral Interp. ....	5	COM 340 Comm. in Org. ....	5
COM 341 Sm. Group Comm. ....	5	COM 370 Arg. Discourse .....	5		

and 25 additional hours at least 15 of which must be at the 400 level or higher. Hours in major, 50.

Other: 30 hours must be taken in one or 15 hours in each of two cognate areas outside the Department of Communication. Electives, 20 hours.

TOTAL HOURS REQUIRED, 192

## Communication Disorders Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

CD 340 Sp. & Hear. Mech. ....	5	CD 341 Phonetics .....	4	CD 350 Intr. Sp. Path-Aud.5	
CD 355 Sp. & Hear. Sci. ....	5	CD 558 Clin. Proc. Sp. Path. ....	4	CD 559 Sp.-Lang. Path.2	
CD 551 Articulation Dis. ....	5	CD 552 Lang. Acq. in Child. ....	5	CD 553 Fluency Dis.5	
CD 554 Vocal Dis. ....	5	CD 560 Intr. Audiology .....	5		
CD 561 Hearing Pathology .....	5	CD 562 Hr. Ev., Rehab./Con. ....	5		

Hours in major, 60.

Other: Minor, 20 hours; electives, 20 hours; 2.2 overall GPA required to take courses above the 300 level; 2.5 overall GPA to take Clinical Practicum (CD 559).

TOTAL HOURS REQUIRED, 192

## Corporate Journalism Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	PA 102 Intro. to Ethics .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

## Prerequisite:

JM 101 Newsw. Style .....	3	JM 221 Beg. Newswriting .....	5	JM222 Newsw. Lab .....	1
JM 313 Reporting .....	5	JM 314 Editing .....	3	JM321 Newsw. Des. ....	5
JM 322 Feature Writing .....	5	JM 323 Newsw. Mgt. ....	5	JM421 Photo-Journal. ....	5
JM 422-423 or 425 .....	3-3 or 6	JM 435 Magazine Concepts .....	5		
One of the following:					
JM 470 Freelance Feature Writing .....	3	JM 485 Adv. Reporting .....	3		

Hours in major, 48.

## SUPPORTING COURSES

At least 20 hours from the following:

MT 241 Bus. Law .....	5	MT 331 Prin. Mktg. ....	5	MT 332 Mkt. Comm. Mgt. ....	5
MT 341 Buyer Behavior .....	5	SY 204 Soc. Behavior .....	5	SY 507 Public Op. & Prop. ....	5
PG 211 Psychology .....	5	EC 200 Economics I .....	5	EC 202 Economics II .....	5
PG 431 Social Psych. ....	5	PO 341 Pressure Groups .....	3	PO 342 Politics/the Media .....	5
EHA 304 Tech. Writing .....	3	EHA 315 B&P Writing .....	3	EH 400 Adv. Comp. ....	5
EHA 415 Writ. Bus. Comm. ....	3	EHA 416 Writing & Editing .....	3		

Two of the following courses:

COM 250 Fnd. of Hum. Comm. ....	5	RTF 336 Television Prod. ....	5	RTF 338 Broad. Newswrit. ....	5
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Other: Electives, 19 hours

TOTAL HOURS REQUIRED, 192.

## Criminal Justice Major

## UNIVERSITY CORE

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
SY 102 Intr. to Sociology ..... 3	COM 100 Pro. Comm. .... 3	

## MAJOR

Prerequisite: LE 260 Survey of Law Enforcement (5).

## Group I.

LE 262 Criminal Investigation ..... 5	PO 504 Con. Law IV-Due Process ..... 5
LE 335 Criminal Law for Police ..... 3	SCR 302 Criminology ..... 5
LE 451 or 464 ..... 5	SCR 306 Juvenile Delinquency ..... 5
EHA 307 Crim. Just. Writing ..... 3	PO 330 Public Law & Con. Res. .... 5
LE 464 Crim. Just. Internship ..... 5	HHP 398 Drugs of Abuse ..... 3
PG 301 Psych. in CJ System ..... 5	SY 304 Minority Groups ..... 5

Also required is a Group II Concentration in either Law Enforcement (CJL), Offender Rehabilitation (CJO), or Youth Services (CJY).

## Group II. Concentrations

The Law Enforcement (CJL) Concentration consists of the following:

LE 261 Criminal Evid. .... 3	LE 361 Surv. of Crim. .... 5	LE 363 Police Adm. & Org. .... 5
LE 412 or 461 ..... 5	PE/MS 105/162 Pistol or Rifle ..... 2	

The Offender Rehabilitation (CJO) Concentration consists of PG 211 Psychology (5) and four courses from:

PG 435 Abn. Psych. .... 5	SCR 420 Prob. & Parole ..... 5	SCR 426 Penology ..... 5
SCR 530 Cont. Corrections ..... 5	SCR 375 Intr. Soc. Welfare ..... 5	CCP 521 Couns./Hum. Svc. .... 4

The Youth Services (CJY) Concentration consists of FCD 267 Hum. Dev. I (4) and SY 301 Sociology of the Family (5) and four courses from the following:

FCD 302 A&E Child. Dev. .... 4	FCD 310 Child & Fam. Interv. .... 4	SCR 415 Juv. Justice ..... 5
SCR 420 Prob. & Parole ..... 5	SW 375 Intr. to Soc. Welfare ..... 5	
SW 377 Child Welfare ..... 5	CCP 521 Couns. & Hum. Svc. .... 4	

Minimum hours in major, 68.

## SUPPORTING COURSES

Courses in support of the CJ major will consist of any of the following, to a maximum of 24 hours, to complete a total of 192 hours.

AC Accounting ..... 4	LE 270 Career Exp. & Plan. .... 2	PO 210 St. & Loc. Gov't ..... 5
CSE 100 PC App. .... 3	PO 312 Intr. Comp. Gov't ..... 5	PO 323 Mun. Gov't ..... 5
or	PO 325 Public Admin. .... 5	PO 501 Constitut. Law I/5
VED 100 Keybd. for Info. Proc. .... 2	HHP 494 Em. Care & First Aid ..... 3	PE Swimming2

Or, any of the options from CJ Concentrations.

Other: Elective, 2 hours

TOTAL HOURS REQUIRED, 192.

## Criminal Justice/Pre-Law Major

## UNIVERSITY CORE

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
SY 102 Intr. to Sociology ..... 3	COM 100 Pro. Comm. .... 3	

## MAJOR

Prerequisite: LE 260 Surv. of Law Enforcement (5).

LE 262 Crim. Invest. .... 5	LE 335 Crim. Law for Pol. .... 3
LE 451 or 464 ..... 5	PG 301 Psych. in CJ Sys. .... 5
PO 504 Con. Law IV-Due Proc. .... 5	SCR 302 Criminology ..... 5
EHA 307 Crim. Just. Writing ..... 3	HHP 398 Drugs of Abuse ..... 3
	SY 304 Minority Groups ..... 5

Hours in major, 49.

## SUPPORTING COURSES

## Pre-Law:

AC 215 Fund. G&C Acct. .... 5	EC 200 Economics I ..... 5	EC 202 Economics II ..... 5
EH 400 Adv. Comp. .... 5	HY 308 Cont. History ..... 3	HY 571 or 572 ..... 5
PO 501 or 502 ..... 5	PG 211 Psychology ..... 5	

Other: Electives, 8 hours.

TOTAL HOURS REQUIRED, 192

**Criminal Justice/Spanish Major****UNIVERSITY CORE**

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

SP 101-102-103 ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
SY 201 Intr. to Sociology ..... 3	COM 100 Pro. Comm. .... 3	

**MAJOR**

Prerequisite: LE 260 Survey of Law Enforcement (5).

LE 262 Crim. Justice ..... 5	LE 335 Crim. Law for Pol. .... 3
LE 451 or 464 ..... 5	PG 301 Psych. in CJ Sys. .... 5
PO 504 Con. Law IV-Due Proc. .... 5	SCR 302 Criminology ..... 5
EHA 307 Crim. Just. Writing ..... 3	HHP 396 Drugs of Abuse ..... 3
	Hours in major, 49.

**SUPPORTING COURSES**

SP 201-202-203 Int. Spanish ..... 4-4-4	SP 301 Phonetics ..... 3
SP 303 Conversation ..... 3	SP 306 Hsp. Com. Dial. .... 3

and one additional Spanish course.

Twenty hours from the following:

AC Accounting ..... 4	CSE 100 PC App. .... 3	LE 270 Car. Exp. & Plan. .... 2
PO 210 St. & Loc. Gov't ..... 5	PO 312 Intr. Comp. Gov't ..... 5	PO 323 Mun. Gov't ..... 5
PO 325 Pub. Admin. .... 5	PO 501 Constitut. Law I ..... 5	PE Swimming ..... 2
VED 100 Keybd. Info. Proc. .... 2	HHP 494 Em. Care & First Aid ..... 3	

Other: Elective, 2 hours

**TOTAL HOURS REQUIRED, 192****Criminology Major****UNIVERSITY CORE**

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

FL Foreign Language ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
SY 201 Intr. to Sociology ..... 3	COM 100 Pro. Comm. .... 3	

**MAJOR**

SCR 302 Criminology ..... 5	SCR 308 Juv. Delinq. .... 5	SCR 450 Soc. Crim. Law ..... 5
SY 220 Statistics ..... 5	SY 370 Meth. Soc. Res. .... 5	SCR 415 or 420 ..... 5
SCR 426 or 530 ..... 5	SY 409 or 502 ..... 5	

Two of the following:

SCR 501 Drugs & Soc. .... 5	SCR 510 Wom. in Crim. Just. .... 5
SCR 515 Police & Soc. .... 5	SCR 520 Victimology ..... 5

Hours in major, 50.

**SUPPORTING COURSES**

Three of the following:

ANT 206 Cult. Anthropol. .... 5	PG 301 Psych. in CJ Sys. .... 5	SY 204 Soc. Behavior ..... 5
SW 375 Intr. Soc. Welfare ..... 5	SW 376 Corn. Soc. Svc. .... 5	PO 501, 502, or 503 ..... 5

Other: A 20-hour minor in subject of student's choice. Electives, 15 hours.

**TOTAL HOURS REQUIRED, 192****Economics Major****UNIVERSITY CORE**

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

FL Foreign Language ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
ANT, GY, PG or SY ..... 3	COM 100 Pro. Comm. .... 3	

**MAJOR**

EC 200 Economics I ..... 5	EC 202 Economics II ..... 5	EC 551 Intermed. Micro. .... 5
EC 554 Hist. Econ. Thought ..... 5	EC 556 Intermed. Macro. .... 5	

plus 25 hours of economics courses at the 300-level or above. Hours in major, 50 Other: Electives, 50 hours.

**TOTAL HOURS REQUIRED, 192.**



## English Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH 400, 404 or 408 .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

EH 403 Interpreting Texts .....	5	EH 411 Intro. to Linguistics .....	5
and forty (40) additional credit-hours in English Department courses numbered 300 or above, at least thirty (30) of which must be in 400 or 500-numbered courses and in which a maximum of three EHA courses may be counted. Within the major and with the assignment of a special advisor, students may choose a Creative Writing emphasis that would draw upon such courses as EH 420, 421, 427, and 428. Hours in major, 50.			

Other: A 20-hour minor in subject of student's choice. Electives, 30 hours.

**TOTAL HOURS REQUIRED, 192**

## Foreign Languages-International Trade Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	BI 105 Persp. in Biology .....	5	PA 101 Intro. to Logic .....	5
Core/Science ** .....	5				

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL FR, GR or SP .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

Includes the completion of a major in French, German, or Spanish. The following courses are required in the respective languages:

FR 321 Bus. French .....	3	FR 421 French Inatl. Trade .....	4	GR 401 Bus. German .....	3
GR 402 German Inatl. Trade .....	3	SP 321 Bus. Spanish .....	3	SP 322 Span. Inatl. Trade .....	3

Hours in major, 45 or 48.

## SUPPORTING COURSES

The business component of this major includes the following:

EC 200 Economics I .....	5	EC 202 Economics II .....	5	AC211 Intr. Acct. I .....	4
AC 212 Intr. Acct. II .....	4	CSE 100 PC Apps. ....	3	MT331 Prin. Mkt. ....	5
MN 310 Prin. Mgt. ....	5	MN 314 Mgt. Info. Syst. ....	2	FI361 Prin. Fin. ....	5
EC 571 Inatl. Econ. ....	5	FI 451 Multinat. Fin. Mgt. ....	5		

and three hours from approved business electives.

Other: Electives, 1 to 4 hours.

**TOTAL HOURS REQUIRED, 192**

## French Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FR 101-102-103 .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

FR 201-202-203 Second-Yr. French .....	5-5-5	FR 301 Conversation .....	3
FR 302 Composition .....	3	FR 303 Civilization .....	3

and twenty-one (21) additional credit hours from courses numbered 300 or above. Hours in major, 45.

Other: Electives, 55 hours.

**TOTAL HOURS REQUIRED, 192**

## Geography Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

Prerequisite: GY 102 (5)					
GY 214 Intr. Phys. Geog. ....	5	GY 215 Intr. Hum. Geog. ....	5		
GY 223 Field Geog. ....	5	GY 240 Intr. Cartography .....	5		

and 35 hours at the 300-level or above. Hours in major, 55.

Other: Electives, 40 hours.

TOTAL HOURS REQUIRED, 192

## German Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

GR 101-102-103 .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

48 hours at the 200-level and above.

Other: Electives, 52 hours.

TOTAL HOURS REQUIRED, 192

## Health Services Administration Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	MH 161 Anal. Geom. ....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
BI 105 Persp. in Biology .....	5	BI 106 Human Biology .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	PA 218 Ethics & Hlth. Sci. ....	5	PO 209 Intro. to Am. Gov't .....	5
SY 577 Medical Sociology .....	5	COM 100 Pro. Comm. ....	3		

## MAJOR

HA 320 Hlth. Policy .....	5	HA 360 Intr. Hlth. Ad. ....	5	HA 361 Leg. Strc. Hlth. Ad. ....	3
HA 370 Hlth. Ad. & Com. ....	3	HA 450 Internship .....	10	HA 451 Intern. Rd. ....	5
HA 500 Dev. Hlth. Care Org. ....	3	HA 510 Fin. Hlth. Ad. ....	3	HA 530 Hlth. Ad. & Reg. ....	3
HA 532 HA & Lg-term Care .....	3	PO 410 Ad. & Mgt. Rec. ....	3		

Hours in major, 46.

## SUPPORTING COURSES

AC 211 Prin. of Acct. I .....	4	AC 212 Prin. of Acct. II .....	4
AC 213 Mgt. Cost & Budg. ....	4	CSE 100 PC App. ....	3
EH 141 Med. Vocab. ....	3	EHA 416 Writing & Edit. ....	3
PG 561 Ind. Psych. ....	5	PG 562 Trng. & Sup. Pers. ....	3
PG 563 Int. & Clsfy. Pers. ....	3	SY 220 or MN 274 .....	5

## MINOR

Business. Students selecting this minor will also select the marketing elective option. MT 331, in that option, plus the supporting course requirements of AC 211 and AC 212, will apply to the minor to total 28 hours.

EC 301 Econ. Prin. & B.P. ....	5	FI 361 Prin. Bus. Fin. ....	5	MN 310 Prin. Mgt. ....	5
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Political Science. The Liberal Arts core requirement of 3 hours will apply to the minor to total 21 hours.

PO 325 Intro. to Public Admin. ....	5	PO 300 Research Methods .....	5
PO 326 Theory of Public Org. ....	5	PO 333 Admin. Responsibility .....	3

Long-Term Care. Supporting course requirements of 5 hours of statistics and HA 532 will apply to the minor to total 22 hours.

FCD 477 Family & Aging .....	3	PG 302 Death & Dying .....	3
PG 507 Maturity & Aging .....	5	SY 477 Sociology of Aging .....	3

Other: Majors will choose EITHER of the following two sets of courses:					
MT 331 Prin. Mkt. ....	5	MT 434 Purchasing .....	5		
		or			
JM 101 Newspaper Style .....	3	JM 304 Intr. to P.R. ....	5	JM 404 PR Case Studies .....	5

TOTAL HOURS REQUIRED, 201

## Health Systems Administration Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp.** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	MH 161 Anal. Geom. ....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
BI 105 Persp. in Biology .....	5	BI 106 Human Biology .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	PA 218 Ethics & Hlth. Sci. ....	5	PO 209 Intro. to Am. Gov't .....	5
SY 577 Medical Sociology .....	5	COM 100 Pro. Comm. ....	3		

## MAJOR

HA 320 Hlth. Policy .....	5	HA 360 Intr. to Hlth. Ad. ....	5	HA 361 Leg. Strc. Hlth. Ad. ....	3
HA 370 Hlth. Ad. & Com. ....	3	HA 450 Internship .....	10	HA 451 Intern. Rd. ....	5
HA 500 Dev. Hlth. Care Orgs. ....	3	HA 510 Fin. Health Ad. ....	3	HA 530 Hlth. Ad. & Reg. ....	3
HA 531 Hlth. Ad. & Tech. ....	3	PO 410 Ad & Mgt. Rec. ....	3		

Hours in major, 46.

## SUPPORTING COURSES

AC 211 Prin. of Acct. I .....	4	AC 212 Prin. of Acct. II .....	4	AC 311 Int. Acct. I .....	5
AC 312 Int. Acct. II .....	5	AC 410 Cost Acct. ....	5	CSE 100 PC Apps. ....	3
FI 361 Prin. Fin. ....	5	EH 141 Med. Vocab. ....	3	EHA 416 App. Writ. & Edit. ....	3
PG 561 Ind. Psych. ....	5	SY 220 or MN 274 .....	5		

## MINOR

Majors will choose one of the following minors:

Business. Supporting course requirements of AC 211, 212 and FI 361 will apply to total 28 hours.

EC 301 Econ. Prin. & B.P. ....	5	MN 310 Prin. Mgt. ....	5	MT 331 Prin. Mkt. ....	5
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Political Science. The Liberal Arts core requirement of 3 hours will apply to total 21 hours.

PO 325 Intr Public Admin. ....	5	PO 300 Research Methods .....	5
PO 326 Theory of Public Org. ....	5	PO 333 Admin. Responsibility .....	3

Long-Term Care. The supporting course requirement of 5 hours of statistics will apply to total 22 hours.

FCD 477 Fam. & Aging .....	3	HA 532 HA & Lg-term Care .....	3	PG302 Death/Dying .....	3
PG 507 Maturity/Aging .....	5	SY 477 Soc. of Aging .....	3		

Elective, 1 hour.

TOTAL HOURS REQUIRED, 201

## History Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp.** .....	5	EH 220-221 Grt. Bks. I & II ....	10
HY 101-102-103 Wld. Hist. ....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

One of these pairs of courses:

HY 201 History of U.S. to 1865 .....	5	HY 202 History of U.S. since 1865
	or	
HY 207 European History, 1500-1815 .....	5	HY 208 European History since 1815
	HY 405 Hist. Res. & Writing .....	5

A minimum of 35 additional hours of history courses, 5 hours of which must be at the 500-level. Hours in major, 50.

Other: Electives, 50 hours.

TOTAL HOURS REQUIRED, 192

## Journalism Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	PA 102 Intr. to Ethics .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

Prerequisite: JM 101 Journalism Style (3).

JM 221 Beginning Newswriting ....	5	JM 222 Newspaper Lab .....	1	JM 313 Reporting .....	5
JM 314 Editing .....	3	JM 321 Newspaper Design .....	5		
JM 322 Feature Writing .....	5	JM 323 Newspaper Management .....	5		
JM 422-423 Journalism Workshop .....	3-3	JM 421 Photo-Journalism I .....	5		
or		JM 465 Hist. & Prin. Journalism .....	5		
JM 425 Journalism Internship .....	6				
		One of the following:			
JM 470 Freelance Feature Writing .....	3	JM 485 Advanced Reporting .....	3		

Hours in major, 48.

## SUPPORTING COURSE

PO 342 Politics & Media .....	5
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Other: Electives, 44 hours.

TOTAL HOURS REQUIRED, 192

## Latin American Studies Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

SP 101-102-103 .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
Geography .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

The student will complete the requirements of one major and one minor in Spanish, Geography, History, or Political Science. The requirements for a regular major in one of the participating departments must be fulfilled. At least 18 hours from the following courses should be included as part of the disciplinary major:

## Spanish:

SP 301 Phonetics .....	3	SP 302 Syntax .....	3	SP 303 Conversation .....	3
SP 304 Composition .....	3	SP 305 Intr. Hispanic Lit. ....	3	SP 313-314-315 S.A. Civ. ....	9
SP 413-414-415 Sp. Am. Lit. ....	9	SP 501 Comp./Stylistics .....	3	SP 502 Conv./Phonetics .....	3

## Geography:

GY 302 Economic Geog. ....	5	GY 304 Geog. Latin America .....	3	GY401 Geog. Internat'l Rel. ....	5
GY 505 Geog. Internat'l Dev. ....	5	GY 507 Res. & Envir. ....	5		

## History:

HY 300 Cent. Amer. ....	3	HY 355 Iberia .....	5	HY552 Cent. Amer. & Carib. ....	5
HY 553 S. Amer. to 1800 .....	5	HY 554 Mexico .....	5	HY555 S. Amer. since 1800 .....	5

## Political Science:

PO 309 Internat'l Relations .....	5	PO 311 Internat'l Org. ....	5	PO312 Comp. Gov't .....	5
PO 318 Latin Amer. & U.S. ....	5	PO 535 Cont. Internat'l Politics .....	5		
PO 539 Gov. & Pol. Lat. Amer. ....	5	PO 540 Internat'l Law .....	5		

Hours in major, 45 to 50.

## SUPPORTING COURSES

SP 201-202-203 Int. Span. ....	4-4-4
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## MINOR

The student will complete a minor in one of the participating departments not serving as the major area. The minor will consist of 20 hours, to be drawn from the above list of courses for the major option.

Other Electives: 18 to 23 hours.

TOTAL HOURS REQUIRED, 192

## Mass Communication Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

RTF 230 Found. of Mass Comm. ....	5	COM 250 Found. of Human Comm. ....	5
COM 260 Found. of Rhetoric .....	5	COM 439 Internship .....	5
One of the following:			
RTF 334 Radio Prod. ....	5	RTF 336 Tele. Prod. ....	5
One of the following:			
RTF 335 Writing for Radio/TV/Film .....	5	RTF 338 Broadcast News Writing .....	5
Twenty hours from the following:			
RTF 235 Modes of Film .....	5	RTF 430 Rad./TV Pro. St. ....	5
RTF 432 Broad. Mgt. ....	5	RTF 433 Media Law/Reg. ....	5
RTF 436 Cinema/Society .....	5	RTF 437 New Technol. ....	5
		Hours in major, 50.	

Other: 30 hours must be taken in one or 15 hours in each of two cognate areas outside the Department of Communication. Electives, 20 hours.

TOTAL HOURS REQUIRED, 192

## Music Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts (AT or TH) ** ..	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

Prerequisites: MU 131-132-133 Mat. & Org. (3-3-3) and MUA 184 Performance (6).					
MU 231 Mat. & Org. ....	5	MU 232 Mat. & Org. ....	5	MU 233 Mat. & Org. ....	5
MU 251 Music Lit. ....	1	MU 252 Music Lit. ....	1	MU 253 Music Lit. ....	1
MU 331 Mat. & Org. ....	3	MU 332 Mat. & Org. ....	3	MU 333 Mat. & Org. ....	3
MU 351 Music History .....	3	MU 352 Music History .....	3	MU 353 Music History .....	3
MU 361 Conducting .....	2	MU 384 Performance .....	6	MU Perf. Ensemble .....	6
		Hours in major, 50.			

Other: Electives, 29 hours.

TOTAL HOURS REQUIRED, 192

## Philosophy Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	PA 102 Intro. to Ethics .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

The major includes 15 hours in history of philosophy which shall be met by taking:					
PA 333 Ancient/Early Med. ....	5	PA 334 Late Med./Early Mod. ....	5	PA 335 Recent/Contemp. ....	5
or by taking any two of the above plus one 5-hour-course substitution drawn from approved alternatives and allowed in consultation with the department head. The student will choose 35 additional hours, at least 25 hours of which must be at or above the 300 level and at least 15 hours of which must be at the 400 or 500 levels. Hours in major, 50.					
Other: Electives, 50 hours.					

TOTAL HOURS REQUIRED, 192



## Political Science Major

## UNIVERSITY CORE

EH	110 English Composition .....	5	EH	Adv. Comp.** .....	5	EH	220-221 Grt. Bks. I & II ...	10
	Core/History ** .....	3-3-3		Core/Mathematics ** .....	5		Core/Fine Arts ** .....	3
U	101 Society & Culture .....	3	U	102 Political Economy .....	3	U	103 Indiv. & Society .....	3
SM	101 or Core/Science ** .....	5		Core/Science ** .....	5	PA	101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL	Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO	209 Intro. to Am. Gov't .....	5
	ANT, GY, PG or SY .....	3		COM 100 Pro. Comm. ....			3

## MAJOR

Prerequisite: One course in algebra, finite mathematics or statistics, or an alternative mathematics course approved by the student's political science advisor.

PO	300 Pol. Sci. Research Methods .....	5	PO	302 Intro. to Pol. Thought .....	5
Three of the following, to include the introductory course(s) to the student's concentration (if any):					
PO	309 Intr. Intl. Rel. ....	5	PO	312 Intr. Comp. Politics .....	5
PO	325 Intr. Public Admin. ....	5	PO	330 Pub. Law/Con. Res. ....	5

The major also will include designated number of courses in one concentration, as follows: American Government, International Relations/Comparative Government, Public Administration and Public Law and Conflict Resolution. Hours in major, 50 to 60.

Other: Electives, 35 to 45 hours.

TOTAL HOURS REQUIRED, 192

## Psychology Major

## UNIVERSITY CORE

EH	110 English Composition .....	5	EH	Adv. Comp.** .....	5	EH	220-221 Grt. Bks. I & II ...	10
	Core/History ** .....	3-3-3		Core/Mathematics ** .....	5		Core/Fine Arts ** .....	3
U	101 Society & Culture .....	3	U	102 Political Economy .....	3	U	103 Indiv. & Society .....	3
SM	101 or Core/Science ** .....	5		Core/Science ** .....	5	PA	101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL	Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO	209 Intro. to Am. Gov't .....	5
	ANT, GY, PG or SY .....	3		COM 100 Pro. Comm. ....			3

## MAJOR

PG	211 Psychology .....	5	PG	314 Psychology as a Science .....	3			
PG	315 Quantitative Methods .....	5	PG	320 Learning .....	5			
At least one other course from among:								
PG	321 Sensory Proc. ....	5	PG	322 Personality .....	5	PG	330 Social .....	5
and at least four courses at the 400 or 500 level. Hours in major, 50.								

Other: Electives, 50 hours.

TOTAL HOURS REQUIRED, 192

## Public Administration Major

## UNIVERSITY CORE

EH	110 English Composition .....	5	EH	Adv. Comp.** .....	5	EH	220-221 Grt. Bks. I & II ...	10
	Core/History ** .....	3-3-3		Core/Mathematics ** .....	5		Core/Fine Arts ** .....	3
U	101 Society & Culture .....	3	U	102 Political Economy .....	3	U	103 Indiv. & Society .....	3
SM	101 or Core/Science ** .....	5		Core/Science ** .....	5	PA	101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL	Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO	209 Intro. to Am. Gov't .....	5
	ANT, GY, PG or SY .....	3		COM 100 Pro. Comm. ....			3

## MAJOR

Prerequisites: PO 210 State & Local Gov't. (5), CSE 100 Personal Computer Apps. (3).					
PO	300 Research Methods .....	5	PO	325 Intro. to Public Admin. ....	5
PO	326 Theory of Public Org. ....	5	PO	327 Policy Process .....	5
PO	514 Financial Admin. ....	5	PO	515 Public Personnel Admin. ....	3
30 hours from the following:					
PO	320 Intergovernmental Relations .....	3	PO	323 Municipal Gov't in U.S. ....	5
PO	328 Government & the Economy .....	3	PO	333 Admin. Responsibility .....	3
PO	501-502-503-504 Con. Law (one) .....	5	PO	505 Metro. Area Gov't. ....	3
PO	517 Labor Rel. in Public Org. ....	3	PO	518 Admin. Law .....	5
PO	519 Problems in Public Admin. ....	5	PO	552 Program Evaluation .....	5

Hours in major, 58.

## MINOR

20 hours in a minor or other courses chosen in consultation with advisor.

Other: Electives, 12 hours.

TOTAL HOURS REQUIRED, 192

## Public Relations Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

Prerequisite: JM 101 Journalism Style (3)		COM 250 Fnd. of Hum. Comm. ....	5	COM 260 Fnd. of Rhet. & Soc. ...	5
RTF 230 Fnd. of Mass Comm. ....	5	COM 311 Persuasive Discourse ....	5	PRCM402 PR Camps/Ethics .....	5
PRCM304 Intro. to PR .....	5	PRCM408 PR Writing & Res. ....	5	COM 439 Internship .....	3 or 6
PRCM404 Case Studies In PR .....	5	One of the following:		RTF337 Elect. Field Prod. ....	5
RTF 334 Radio Prod. ....	5	RTF 338 TV Prod. ....	5		
RTF 335 Writ. for TV/Radio/Film .....	5	One of the following:		RTF 338 Broadcast Newswriting .....	5
RTF 433 Mass Media Law & Reg. ....	5	COM 451 Sur. Resch. Meth. in Comm. ....	5		
		Hours in major, 58 to 61.			

## SUPPORTING COURSES

MT 255 Leg. & Soc. Env. Bus. ....	4	MT 331 Prin. Mkt. ....	5	MT332 Mkt. Comm. Mgt. ....	5
MT 341 Buyer Behavior .....	5	PO 342 Politics/Media .....	5		
		14 hours from the following:			
JM 221 Bag. Newswrit. ....	5	JM 313 Reporting .....	5	JM314 Copyread. & Edit. ....	3
JM 321 Newsp. Design .....	5	JM 322 Feature Writing .....	5		
Other: Electives, 9 to 12 hours.					

TOTAL HOURS REQUIRED, 192

## Religion Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

FL Foreign Language .....	5-5-5	PA 102 Intro. to Ethics .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

RL 201 Intr. to Religion .....	3	RL 301 World Religions .....	5		
Other: Electives, 55 hours.					

TOTAL HOURS REQUIRED, 192

## Russian Studies Major

## UNIVERSITY CORE

EH 110 English Composition .....	5	EH Adv. Comp. ** .....	5	EH 220-221 Grt. Bks. I & II ....	10
Core/History ** .....	3-3-3	Core/Mathematics ** .....	5	Core/Fine Arts ** .....	3
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Society .....	3
SM 101 or Core/Science ** .....	5	Core/Science ** .....	5	PA 101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

## COLLEGE CORE

RU 101-102-103 .....	5-5-5	Ethics or Religion .....	5	PO 209 Intro. to Am. Gov't .....	5
ANT, GY, PG or SY .....	3	COM 100 Pro. Comm. ....	3		

## MAJOR

RU 201-202-203 Second Year Ru. 5-5-5 and 38 hours chosen from the following, including at least two courses each in (1) history, (2) political science, and (3) Russian language, literature and/or culture:

RU 274 Russian Culture .....	5	RU 275 Soviet Culture .....	5	RU 301 Russian Convers. ....	3
RU 302 Russian Composition .....	3	RU 303 Russian Civilization .....	3	RU 351 Russ. Lit. 1820-1860 ..	3
RU 352 Russ. Lit. 1860-1917 .....	3	RU 353 Sov. Lit. 1917-Present ..	3	GY 303 Sov. Union, L&P. ....	5
HY 556 Russia 800 - 1861 .....	5	HY 557 Rus./USSR since 1861 ....	5	PA 401 Philos. Fnd. Comm. ....	5
PA 440 Contemporary Marxism .....	5	PO 523 Commun. Theory & Practice .....	3		
PO 536 Gov't & Pol. of Sov. Union .....	5	PO 537 Soviet Foreign Policy .....	5		

Hours in major, 53.

Other: A disciplinary major is also required, 45 hours minimum. Elective, 2 hours.

TOTAL HOURS REQUIRED, 192

**Social Work Major****UNIVERSITY CORE**

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

FL Foreign Language ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
ANT 308 Physical Anthropology ..... 5	COM 100 Pro. Comm. .... 3	

**MAJOR**

SY 201 Intro. to Sociology ..... 3	SW 320 Field Practicum ..... 4
SW 375 Intro. to Social Welfare ..... 5	SW 376 Community Social Services ..... 5
SW 380 Hum. Behav. Soc. Envir. I ..... 5	SW 381 Hum. Behav. Soc. Envir. II ..... 5
SW 506 Social Work Methods I ..... 5	SW 507 Social Work Methods II ..... 5
SW 508 Social Work Methods III ..... 3	SW 575 Soc. Welfare Policy ..... 5

SW 420 SW Field Placement ..... 15  
Hours in major, 60.**MINOR**

SY 220 Statistics ..... 5	SY 304 Minority Groups ..... 5
SY 370 Meth. of Social Research ..... 5	SY Elective ..... 5

Other: Electives, 18 hours.

**TOTAL HOURS REQUIRED, 192****Sociology Major****UNIVERSITY CORE**

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

FL Foreign Language ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
SY 201 Intr. to Sociology ..... 3	COM 100 Pro. Comm. .... 3	

**MAJOR**

ANT 200 Biosocial Backgmd. .... 3	ANT 201 Cult. Framework ..... 3	SY 201 Intr. Sociology ..... 3
SY 220 Statistics ..... 5	SY/RSY 370 Meth. of Soc. Res. .... 5	SY 409 or 502 ..... 5

One of the following:

SY 304 Minority Groups ..... 5	SY 520 Racial/Ethnic Rel. .... 5	ANT313 Status of Women ..... 5
SCR 510 Wom. in CJ Sys. .... 5	SW 320 Practicum ..... 5	

Additional major courses may be taken from ANT (no more than 8 hours), SY, RSY, and SCR courses; Hours in major, 51.

**MINOR**

A 20-hour minor is required.

Other Electives, 29 hours.

**TOTAL HOURS REQUIRED, 192****Spanish Major****UNIVERSITY CORE**

EH 110 English Composition ..... 5	EH Adv. Comp. ** ..... 5	EH 220-221 Grt. Bks. I & II .... 10
Core/History ** ..... 3-3-3	Core/Mathematics ** ..... 5	Core/Fine Arts ** ..... 3
U 101 Society & Culture ..... 3	U 102 Political Economy ..... 3	U 103 Indiv. & Society ..... 3
SM 101 or Core/Science ** ..... 5	Core/Science ** ..... 5	PA 101 Intro. to Logic ..... 5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

SP 101-102-103 ..... 5-5-5	Ethics or Religion ..... 5	PO 209 Intro. to Am. Gov't ..... 5
ANT, GY, PG or SY ..... 3	COM 100 Pro. Comm. .... 3	

**MAJOR**

SP 201-202-203 Int. Span. .... 4-4-4	SP 301 Phonetics ..... 3	SP 302 Syntax ..... 3
SP 303 Conversation ..... 3	SP 304 Composition ..... 3	SP 305 Intr Hispanic Lit. .... 3

and 18 additional credit hours in courses numbered 300 or above. Hours in major, 45.

Other: Electives, 55 hours.

**TOTAL HOURS REQUIRED, 192**

**Theatre Major****UNIVERSITY CORE**

EH	110 English Composition .....	5	EH	Adv. Comp. ** .....	5	EH	220-221 Gnt. Bks. I & II .....	10
	Core/History ** .....	3-3-3		Core/Mathematics ** .....	5		Core/Fine Arts (AT or MU) ** .....	3
U	101 Society & Culture .....	3	U	102 Political Economy .....	3	U	103 Indiv. & Society .....	3
SM	101 or Core/Science ** .....	5		Core/Science ** .....	5	PA	101 Intro. to Logic .....	5

\*\* For University Core options to satisfy these requirements, see page 39.

**COLLEGE CORE**

FL	Foreign Language .....	5-5-5	Ethics or Religion .....	5	PO	209 Intro. to Am. Gov't .....	5
	ANT, GY, PG or SY .....	3	COM	100 Pro. Comm. ....			3

**MAJOR**

TH	200 Intr. Acting & Directing .....	3	TH	201 Intro. to Theatre .....	3
TH	231 Theatre Technology I .....	3	TH	240 Theatrical Design .....	3
TH	261 Costume Construction .....	3	TH	265 Stage Makeup .....	3
TH	271 Play Analysis .....	3	TH	284 Dance Techniques .....	2
TH	321 Directing Fundamentals .....	3	TH	371 History of Theatre I .....	3
TH	372 History of Theatre II .....	3	TH	373 History of Theatre III .....	3
TH	374 History of Theatre IV .....	3	TH	Theatre Electives I .....	2

Hours in major, 50.

**SUPPORTING COURSES**

TH	300 Lab. (12 quarters) .....	12
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Other: Electives, 38 hours.

**TOTAL HOURS REQUIRED, 192**

**School of Fine Arts**

In all Fine Arts curricula, the student is to complete two designated writing reinforcement courses during the junior and senior years. Electives may include six hours Basic ROTC and six hours Advanced ROTC. In curricula which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses not in the University core to be selected with help of departmental advisor.

**Symbols for Fine Arts Curricula**

Art .....	AT
Music .....	MU
Theatre .....	TH

**Department of Art**

The Visual Arts curriculum offers two options: In Visual Communications it prepares students to become graphic designers, illustrators, advertising artists and art directors. In Fine Arts it prepares students to become painters, sculptors and printmakers. Both program options lead to the Bachelor of Fine Arts degree. The programs of studio courses are combined with study of the historical and cultural background of the visual arts. Courses in general education promote an understanding of the artist's roles and responsibilities in society. A structured program of fundamentals and intermediate courses precedes advanced courses in which students work independently with the guidance of instructors.

The Visual Communications program gives fundamental training in the techniques of graphic design and related areas of visual communication. It is strongly reinforced with courses in painting, drawing, printmaking, sculpture and art history. In the Fine Arts program, students preparing themselves as practicing artists or artist-teachers may concentrate entirely upon the offerings in the traditional fine arts media. Students planning to teach at the college level need to secure a Master of Fine Arts degree at this or another institution.

The Visual Arts curriculum may be divided into three general categories: academic courses, studio courses and courses in art history. Studio courses are divided into three progressive group levels. The first year is made up of visual art fundamentals. The second and third years contain classes in basic traditional media in which the student learns technical procedures and develops the disciplines necessary to self expression in the third and fourth year areas of concentration. The third and fourth year areas include visual design and illustration, or drawing, painting, printmaking and sculpture.

The department also offers a limited number of courses for education majors specializing in art, and for students in other fields who seek general knowledge and appreciation of the visual arts. Students in the Liberal Arts Curriculum may elect a minor (20 hours) or B.A. with art major.

The Department of Art is an accredited member of the National Association of Schools of Art and Design, and a member of the College Art Association.

## Transfer

All coursework to be considered for transfer credit should be the equivalent of work required in the Visual Arts curriculum at Auburn. Art studio course credit earned (C or better) will be considered for advanced standing if a complete portfolio of work is submitted to the Auburn Art Department for evaluation. If the examples do not approximate Auburn's requirements, then credit may be given for an art studio elective. If the quality of work is not acceptable, credit may be given for an open elective. **Transfer students are advised that their degrees may require more than a total of four years because of the professional nature of Auburn's curriculum, the sequential arrangement of its courses, and heavy demands for enrollment.**

### Graduate Study in Fine Arts

Students who hold the degree of Bachelor of Fine Arts, or a similar degree, are eligible to apply to the Dean of the Graduate School for admission to the graduate program leading to the Master of Fine Arts degree. For details examine the *Graduate School Bulletin*.

### Curriculum in Art

### FRESHMAN YEAR

FRESHMAN YEAR			
AT 111 Fundamentals .....	4	AT 112 Fundamentals .....	4
AT 121 Fundamentals .....	4	AT 122 Fundamentals .....	4
AT 171 History of Art .....	3	AT 172 History of Art .....	3
EH 110 Eng. Comp. ....	5	Core/Philosophy ** .....	5
		Core/Fine Arts (AR, MU, TH)** .....	3

### SOPHOMORE YEAR

AT	211 Basic Fig. Dwg. ....	4	AT	212 Fig. Constrm. ....	4	AT	213 Fig. Drawing ....	4
AT	Group A Studio .....	4	AT	Group A Studio .....	4	AT	Group A Studio .....	4
EH	220 Great Books I .....	5	EH	221 Great Books II .....	5	AT	Art History .....	3
	Core/History ** .....	3		Core/History ** .....	3		Core/Mathematics ** ..	5

### JUNIOR YEAR

AT	Group A Studio .....	4	AT	Group A Studio .....	4	AT	Group A Studio .....	4
AT	A or B Studio .....	4	AT	A or B Studio .....	4	AT	A or B Studio .....	4
AT	Art History .....	3	AT	Art History .....	3	AT	Group B Studio .....	4
	Core/Science ** .....	5		Core/Science ** .....	5	EH	Adv. Comp. ** .....	5

**SENIOR YEAR**

AT	A or B Studio	4	AT	Group B Studio	4	AT	499 Senior Project	5
AT	Group B Studio	4	AT	Studio or AT HY	4	AT	Studio or AT HY	4
AT	Studio or AT HY	4	AT	Studio or AT HY	4	AT	Studio or AT HY	4
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3

**TOTAL - 192 HOURS**

<sup>\*\*</sup> For University Core options to satisfy these requirements, see page 39.

## GROUP A STUDIO

Figure Drawing: AT 211 Basic, AT 212 Construction, AT 213.

Drawing: AT 214, 215, 216.

Visual Communications: AT 221 Graphic Processes, AT 222 Design Systems, AT 223 Graphic Formats, AT 321 Photodesign.

AT 322 Photocommunication, AT 323 Typographics.

Painting: AT 231-331 Oil. AT 232-332 Watercolor. AT 233-333 Acrylic.

Printmaking: AT 241-341 Relief, AT 242-342 Intaglio, AT 243-343 Lithography.

**Sculpture:** AT 251-351 Clay, AT 252-352 Wood, AT 253-353 Stone.

## GROUP B STUDIO

Visual Design: AT 424-425-426

Advanced Painting/Drawing: AT 434-435-436.

Advanced Printmaking: AT 444-445-446

Advanced Sculpture: AT 454-455-456.

Illustration: AT 464-465-466

All require 2.0 average in 200-level drawing and major area courses.



## Department of Music

The Department of Music provides instruction and performing experience to students interested in developing their talents in music. The courses of study provided by the Department have been created to present a balance between creative skills and academic studies, allowing at the same time a certain flexibility to meet individual requirements.

The Department of Music offers the Music major a professional curriculum leading to the Bachelor of Music degree, with majors in (a) Performance, (b) Theory and Composition, (c) Church Music, (d) Piano Pedagogy, or (e) Jazz. These programs provide preparation for the professional field of performance and for private or college teaching of applied music, theory and composition. They also provide training for church organists and choir directors.

Students pursuing the Bachelor of Music Education degree will register through the College of Education.

For the student wishing to major in Music History and Literature, the Department of Music offers a program of studies leading to the Bachelor of Arts degree. This is a cultural, not a professional, degree. See "Music Major" in the Liberal Arts Curriculum.

All music majors and minors must perform an entrance audition and take a placement examination in music theory. Non majors will be asked to audition for placement in private instruction. Certain performing groups will require auditions as well.

Private instruction is available to all university students in band and orchestral instruments, voice, piano and organ. Performance groups, such as the Marching and Concert Bands, Orchestra, University Singers, Concert Choir, Women's Chorus and Men's Chorus, Opera Workshop and various instrumental ensembles, are also available to students in all curricula.

In each curriculum option six hours of Basic and six hours of Advanced ROTC may be scheduled in lieu of 12 hours of general electives.

## Graduate Work in Music

Admission to graduate work toward the Master of Music Degree requires a Bachelor's degree in music, music education, or the equivalent from this or another recognized institution. Admission to graduate study in the Music Department shall be in accordance with policies of the Graduate School. In addition, all candidates must take entrance examinations in music theory and history administered by members of a Departmental Screening Committee, demonstrate competency at the keyboard, and fulfill additional requirements as follows:

Instrumental Majors - Audition

Voice Majors - Audition and demonstration of satisfactory diction in Italian, French and German.

## Music Organizations

Several musical organizations, sponsored by the University and directed by the Department of Music, provide excellent training in group music. See section on musical groups in the student handbook, Tiger Cub. These activities, which are open to students of the university, may be taken with or without credit.

## Supplementary Requirements for Bachelor of Music and Bachelor of Arts Degree Candidates

1. All Music Majors, Music Education Majors and Music Minors taking MU 100 are to attend 80 percent (or nine, whichever is less) of the concerts and Wednesday afternoon convocations on the approved list compiled by the departmental office. This is on a pass/fail basis. The list of approved concert offerings is to be prepared by the departmental office each quarter and distributed to all students at the first convocation. A signed program is to be collected by a person designated by the departmental office. These are to be recorded by office personnel along with convocation attendance. Students must complete the appropriate number of quarters of convocation to clear graduation. Absences may be excused only by the Head of the Music Department.

2. At the end of the Sophomore year a comprehensive examination will be given which must be passed before the student is admitted to the upper division music courses. Transfer students must complete this examination to receive junior standing.

3. A. Students electing the performance major will present a junior recital during the third year of study and a senior recital during the fourth year of study.

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B. Students electing the Theory and Composition major will present an original composition in small form during the third year of study and an original composition in large form during the fourth year of study.

C. Students electing the History and Literature major will present a written thesis during the fourth year of study.

D. Students electing the Church Music major will present a senior recital during the fourth year of study. The major performance area must be in organ or voice; if one is an organ major, his minor must be voice; if one is a voice major, an organ minor is required unless his keyboard background is too weak, in which case the minor must be piano.

E. Students electing the Piano Pedagogy major will present a senior recital during the fourth year of study.

4. Credit in private instruction is based on the amount of practice, each credit hour requiring a minimum of five hours practice per week.

5. Students whose major performing medium is not piano or organ will elect piano as the minor instrument.

6. Participation in an approved music performing group is required each quarter, with or without credit. Participation in opera workshop is required of junior and senior voice majors.

7. All students taking private instruction will meet public performance requirements as designated by the faculty. (See Music Department special regulations regarding requirements for jury examinations and convocation performances.)

## Performance Major

### FRESHMAN YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU100 Convocation .....	0
MU 131 Mat. & Org. ....	5	MU 132 Mat. & Org. ....	5	MU133 Mat. & Org. ....	5
EH 110 Eng. Comp. ....	5	Core/Philosophy ** .....	5	Core/History ** .....	5
Core/History ** .....	3	Core/History ** .....	3	MUA181 Performance .....	3
MUA 181 Performance (maj.) .....	3	MUA 181 Performance .....	3	MUA187 Performance .....	1
MUA 187 Performance (min.) .....	1	MUA 187 Performance .....	1	MUPerform. Group .....	1
MU Perform. Group .....	1	MU PerformGroup .....	1	MU251 Music Literature .....	1
MU 251 Music Literature .....	1	MU 251 Music Literature .....	1		

### SOPHOMORE YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 231 Mat. & Org. ....	5	MU 232 Mat. & Org. ....	5	MU 233 Mat. & Org. ....	5
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	Core/Mathematics ** .....	5
MUA 181 Performance .....	3	MUA 181 Performance .....	3	MUA 181 Performance .....	3
MUA 187 Performance .....	1	MUA 187 Performance .....	1	MUA 187 Performance .....	1
MU Perform. Group .....	1	MU Perform. Group .....	1	MU Perform. Group .....	1
MU Ensemble **** .....	1	MU Ensemble **** .....	1	MU Ensemble **** .....	1
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. & Soc. ....	3

### JUNIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MUA 381 Performance .....	3	MUA 381 Performance .....	3	MUA 381 Performance .....	3
MU 331 Mat. & Org. ....	3	MU 332 Mat. & Org. ....	3	MU 333 Mat. & Org. ....	3
MU 361 Conducting .....	2	MU 362 Conducting .....	2	MU 362 Conducting .....	2
MU 351 Music History .....	3	MU 352 Music History .....	3	MU 353 Music History .....	3
Core/Science ** .....	5	Core/Science ** .....	5	EH Adv. Comp. ** .....	5
MU Ensemble .....	1	MU Ensemble .....	1	MU Ensemble .....	1
Elective .....	3	Elective .....	3	Elective .....	3

### SENIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MUA 381 Performance .....	3	MUA 381 Performance .....	3	MUA 381 Performance .....	3
FL Foreign Language .....	5	FL Foreign Language .....	5	FL Foreign Language .....	5
MU 452 or 454 .....	3	MU Pedagogy .....	3	Elective .....	4
MU Ensemble .....	1	MU Ensemble .....	1		
Elective .....	3	Elective .....	3		

### TOTAL - 211 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

\*\*\*\* In lieu of three quarters of Ensemble, Vocal Performance Majors will take FL 391, Lyric Diction

## Composition Major

## FRESHMAN YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 131 Mat. & Org. ....	5	MU 132 Mat. & Org. ....	5	MU 133 Mat. & Org. ....	5
EH 110 English Comp. ....	5	Core/Philosophy ** .....	5	Elective .....	3
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3
MUA 184 Performance .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1
MU 251 Music Literature .....	1	MU 252 Music Literature .....	1	MU253 Music Literature .....	1
MU Composition .....	1	MU Composition .....	1	MU Composition .....	1
MU Perform. Group .....	1	MU Perform. Group .....	1	MU Perform. Group .....	1

## SOPHOMORE YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 231 Mat. & Org. ....	5	MU 232 Mat. & Org. ....	5	MU 233 Mat. & Org. ....	5
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	Core/Mathematics ** .....	5
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. in Soc. ....	3
MUA 184 Performance .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1
MU Composition .....	1	MU Composition .....	1	MU Composition .....	1
MU Perform. Group .....	1	MU Perform. Group .....	1	MU Perform. Group .....	1
MU Ensemble .....	1	MU Ensemble .....	1	MU Ensemble .....	1

## JUNIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 331 Mat. & Org. ....	3	MU 332 Mat. & Org. MU .....	3	MU 333 Mat. & Org. ....	3
MU 334 Composition .....	1	MU 335 Composition .....	1	MU 336 Composition .....	1
MU 351 Music History .....	3	MU 352 Music History .....	3	MU 353 Music History .....	3
MU 337 Modern Harmony .....	3	MU 338 Modern Harmony .....	3	MU 339 Modern Harmony .....	3
MUA 384 Performance .....	1	MUA 384 Performance .....	1	MUA 384 Performance .....	1
Core/Science ** .....	5	Core/Science ** .....	5	EH Adv. Comp. ** .....	5
MU Perform. Group .....	1	MU Perform. Group .....	1	MU Perform. Group .....	1
MU 361 Conducting .....	2	MU 362 Conducting .....	2	MU 363 Conducting .....	2

## SENIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 384 Performance .....	1	MU 384 Performance .....	1	MU 384 Performance .....	1
MU 435 Composition .....	3	MU 436 Composition .....	3	MU 437 Composition .....	3
MU 537 Orchestration .....	3	MU 300 Electronic Music .....	3	MU Perform. Group .....	1
MU Perform. Group .....	1	MU Perform. Group .....	1	FL Foreign Language .....	5
FL Foreign Language .....	5	FL Foreign Language .....	5	Elective .....	4
Elective .....	6	Elective .....	6	Elective .....	4

## TOTAL - 208 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

## Church Music Major

## FRESHMAN YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 131 Mat. & Org. ....	5	MU 132 Mat. & Org. ....	5	MU 133 Mat. & Org. ....	5
EH 110 English Comp. ....	5	Core/Philosophy ** .....	5	Elective .....	6
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3
MUA 184 Performance (maj.) .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1
MUA 187 Performance (min.) .....	1	MUA 187 Performance .....	1	MUA 187 Performance .....	1
MU Perform. Group .....	1	MU Perform. Group .....	1	MU Perform. Group .....	1
MU 251 Music Literature .....	1	MU 252 Music Literature .....	1	MU 253 Music Literature .....	1

## SOPHOMORE YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 231 Mat. & Org. ....	5	MU 232 Mat. & Org. ....	5	MU 233 Mat. & Org. ....	5
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	Core/Mathematics ** .....	5
MUA 181 Performance .....	3	MUA 181 Performance .....	3	MUA 181 Performance .....	3
MUA 187 Performance .....	1	MUA 187 Performance .....	1	MUA 187 Performance .....	1
MU 211 Service Playing .....	1	MU 212 Service Playing .....	1	U 103 Indiv. & Soc. ....	3
MU Perform. Group .....	1	MU Perform. Group .....	1	MU Perform. Group .....	1
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Soc. ....	3

## JUNIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 331 Mat. & Org. ....	3	MU 332 Mat. & Org. ....	3	MU 333 Mat. & Org. ....	3
MUA 381 Performance .....	3	MU 381 Performance .....	3	MU 381 Performance .....	3
MU 351 Music History .....	3	MU 352 Music History .....	3	MU 353 Music History .....	3
MU 311 Liturgies .....	3	MU 312 Hymnology .....	3	Elective .....	3
Core/Science ** .....	5	Core/Science ** .....	5	EH Adv. Comp. ** .....	5
MU Ensemble .....	1	MU Ensemble .....	1	MU Ensemble .....	1

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### SENIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MUA 381 Performance .....	3	MUA 381 Performance .....	3	MU 381 Performance .....	3
MU 361 Conducting .....	2	MU 362 Conducting .....	2	MU Ensemble .....	1
MU Ensemble .....	1	MU Ensemble .....	1	FL Foreign Language .....	5
FL Foreign Language .....	5	FL Foreign Language .....	5	MU 416 Church Music Sem. ....	3
Elective .....	6	MU 453 Choral Literature .....	3	MU 415 Organ Literature .....	or
		Elective .....	4	MU 442 Vocal Pedagogy .....	3

### TOTAL - 212 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

## Jazz Studies Major

### FRESHMAN YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 131 Mat. & Org. ....	5	MU 132 Mat. & Org. ....	5	MU 133 Mat. & Org. ....	5
EH 110 English Comp. ....	5	Core/Philosophy ** .....	5	Elective .....	6
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3
MU 251 Music Literature .....	1	MU 252 Music Literature .....	1	MU 253 Music Literature .....	1
MU 134 Lab Band .....	1	MU 134 Lab Band .....	1	MU 134 Lab Band .....	1
MUA 184 Performance .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1

### SOPHOMORE YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 231 Mat. & Org. ....	5	MU 232 Mat. & Org. ....	5	MU 233 Mat. & Org. ....	5
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	Core/Mathematics ** .....	5
MU 202 Jazz Piano .....	1	MU 201 Jazz Piano .....	1	MU 202 Jazz Piano .....	1
MU 134 Lab Band .....	1	MU 134 Lab Band .....	1	MU 134 Lab Band .....	1
MUA 184 Performance .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Soc. ....	3
Elective .....	3	Elective .....	3	Elective .....	3

### JUNIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 331 Mat. & Org. ....	3	MU 332 Mat. & Org. ....	3	MU 300 Electronic Studio .....	3
MU 341 Jazz Theory .....	3	MU 342 Jazz Theory .....	3	MU 343 Jazz Theory .....	3
MU 344 Jazz Repertoire .....	3	MU 345 Jazz Repertoire .....	3	MU 346 Jazz Repertoire .....	3
MU 351 Music History .....	3	MU 352 Music History .....	3	MU 353 Music History .....	3
MUA 384 Performance .....	1	MUA 384 Performance .....	1	MUA 384 Performance .....	1
MU 134 Lab Band .....	1	MU 134 Lab Band .....	1	MU 134 Lab Band .....	1
Core/Science ** .....	5	Core/Science ** .....	5	EH Adv. Comp. ** .....	5

### SENIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
FL Foreign Language .....	5	FL Foreign Language .....	5	FL Foreign Language .....	5
MU 437 Jazz Improvisation .....	3	MU 438 Jazz Improvisation .....	3	MU 439 Jazz Improvisation .....	3
MUA 384 Performance .....	1	MUA 384 Performance .....	1	MUA 384 Performance .....	1
MU 461 Jazz Masterworks .....	3	MU 462 Jazz Comp. & Arr. ....	3	MU 463 Jazz Comp. & Arr. ....	3
MU 134 Lab Band .....	1	MU 134 Lab Band .....	1	MU 134 Lab Band .....	1
MU 361 Conducting .....	2	MU 362 Conducting .....	2	Elective .....	4

### TOTAL - 210 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

## Piano Pedagogy Major

### FRESHMAN YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 131 Mat. & Org. ....	5	MU 132 Mat. & Org. ....	5	MU 133 Mat. & Org. ....	5
EH 110 English Comp. ....	5	Core/Philosophy ** .....	5	Elective .....	3
MUA 184 Performance (maj.) .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1
MUA 187 Performance (min.) .....	1	MUA 187 Performance .....	1	MUA 187 Performance .....	1
MU 251 Music Literature .....	1	MUA 252 Music Literature .....	1	MU 253 Music Literature .....	1
MU 327 Piano Ensemble .....	1	MU 327 Piano Ensemble .....	1	MU 327 Piano Ensemble .....	1
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3

### SOPHOMORE YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MU 231 Mat. & Org. ....	5	MU 232 Mat. & Org. ....	5	MU 233 Mat. & Org. ....	5
EH 220 Great Books I .....	5	EH 221 Great Books II .....	5	Core/Mathematics ** .....	5
MU 184 Performance .....	1	MUA 184 Performance .....	1	MUA 184 Performance .....	1
MUA 187 Performance .....	1	MUA 187 Performance .....	1	MUA 187 Performance .....	1
MU 327 Piano Ensemble .....	1	MU 327 Piano Ensemble .....	1	MU 327 Piano Ensemble .....	1
Elective .....	1	Elective .....	1	Elective .....	1
U 101 Society & Culture .....	3	U 102 Political Economy .....	3	U 103 Indiv. & Soc. ....	3

## College of Liberal Arts

### JUNIOR YEAR

MU 100 Convocation .....	0	MU 100 Convocation .....	0	MU 100 Convocation .....	0
MUA 181 Performance .....	3	MUA 181 Performance .....	3	MUA 181 Performance .....	3
MU 351 Music History .....	3	MU 352 Music History .....	3	MU 353 Music History .....	3
Core/Science ** .....	5	Core/Science ** .....	5	EH Adv Comp. ** .....	5
CIM 304 Music & Rel. Arts .....	5	CIM 596 Curr. Trends .....	4	FED 300 Educ. Psych. ....	5
MU 457 Keyboard Lit. ....	1	MU 458 Keyboard Lit. ....	1	MU 459 Keyboard Lit. ....	1
MU 324 Accompanying .....	1	MU 326 Accompanying .....	1	MU 326 Accompanying .....	1

### SENIOR YEAR

FL Foreign Language .....	5	FL Foreign Language .....	5	FL Foreign Language .....	5
MUA 381 Performance .....	3	MUA 381 Performance .....	3	MUA 381 Performance .....	3
MU 424 Accompanying .....	1	MU 425 Accompanying .....	1	MU 426 Accompanying .....	1
MU 300 Electronic Studio .....	3	MU 361 Conducting .....	2	MU 362 Conducting .....	2
Elective .....	1	Elective .....	1	Elective .....	2
MU 447 Piano Pedagogy .....	3	MU 448 Piano Pedagogy .....	3	MU 449 Piano Pedagogy .....	3
MU 471 Piano Sk. & TT .....	2	MU 472 Piano Sk. & TT .....	2	MU 473 Piano Sk. & TT .....	2

### TOTAL - 206 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology.

## Department of Theatre

The Department of Theatre provides instruction and production experience to students interested in developing their talents in the theatrical art, whether as majors or non-majors. To permit students to explore their personal resources in theatre, a broad range of classroom, laboratory, and performance experiences is provided in acting, directing, scenic and lighting design, costume design, theatre technology, construction and crafts, theatre history, dramatic literature, theatre criticism and theatre administration and management.

The Bachelor of Arts major in the Liberal Arts Curriculum is the entry program for all theatre majors. Majors may elect to remain in this program throughout their studies or may apply for admission to BFA programs after the first year.

Admission to the BFA degree programs is upon invitation by the theatre faculty or upon application by the student and approval by the theatre faculty. The Bachelor of Fine Arts degree is specifically for those students of outstanding talent who enter college with a firm idea of their professional goals or who discover them soon after entering undergraduate study.

The Bachelor of Fine Arts in Theatre is designed for students seeking professional training and desiring an intensive program of theatre studies with a high degree of specialization in a major area of concentration. For students in Theatre Performance, the primary emphasis is given to actor training with its attendant disciplines, but a secondary emphasis may be developed in directing, dance, etc. Students in Theatre Production/Design Technology are directed toward the mastery of fundamental design skills, including scenic, lighting, sound, costume and makeup, as well as technical theatre. For students in Theatre Production/Management, the areas include stage management, production, or company management, with the focus on a balance of performance, management, and technology classes aimed at achieving a complete overview of the production process.

Admission to the BFA programs involves an audition or presentation of portfolio with continued quarterly review. Final recommendation for graduation is made after the successful presentation of a senior project during the candidate's final year.



## Theatre-Performance Major

## FRESHMAN YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH300 Theatre Lab .....	1
TH 201 Intr. to Theatre .....	3	TH 200 Intr Acting & Dir. ....	3	TH261 Costume Constr. ....	3
TH 231 Theatre Tech. I .....	3	TH 265 Stage Makeup .....	3	TH284 Dance Tech. ....	2
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3
EH 110 English Comp. ....	5	Elective .....	5	Core/Philosophy ** .....	5

## SOPHOMORE YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 211 Voice for the Actor I .....	2	TH 212 Acting I Fund. ....	4	TH 271 Play Analysis .....	3
TH 240 Theat. Design .....	3	Core/Music or Art .....	3	TH 371 Hist. of Theatre I .....	3
Core/Math ** .....	5	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. & Soc. ....	3

## JUNIOR YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 321 Directing I Fund. ....	3	TH 311 Voice for the Actor II .....	2	TH 373 Hist. of Theatre III .....	3
TH 372 Hist. of Theatre II .....	3	Core/Science ** .....	5	TH 312 Acting II Char. ....	5
Core/Science ** .....	5	Electives .....	9	EH Adv. Comp. ** .....	5
Elective .....	3	Electives .....	4	.....	.....

## SENIOR YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 413 Acting Auditions .....	1	TH 412 Acting III Sc. St. ....	5	TH 499 Sr. Project .....	4
TH 374 Hist. of Theatre IV .....	3	Electives .....	12	Electives .....	13
TH 411 Voice for Actor III .....	3	.....	.....	.....	.....
Electives .....	9	.....	.....	.....	.....

## TOTAL - 192 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

## Theatre-Production/Design Technology Major

## FRESHMAN YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 201 Intr. to Theatre .....	3	TH 200 Intr. Acting & Dir. ....	3	TH 261 Costume Const. ....	3
TH 231 Theatre Tech. I .....	3	TH 232 Theatre Tech. II .....	4	CSE 100 Comp. App. ....	3
EH 110 English Comp. ....	5	Elective .....	5	Core/Philosophy ** .....	5
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3

## SOPHOMORE YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 240 Theat. Design .....	3	TH 233 Draft. for Theatre ....	4	TH 271 Play Analysis .....	3
TH 345 Rend. for Design .....	4	TH 363 Costume Const. II .....	4	TH 371 Hist. of Theatre I .....	3
Core/Math ** .....	5	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3

## JUNIOR YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 284 Dance Tech. ....	2	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 300 Theatre Lab .....	1	TH 373 Hist. of Theatre III .....	3	TH 374 Hist. of Theatre IV .....	3
TH 372 Hist. of Theatre II .....	3	Core/Science ** .....	5	TH 265 Stage Makeup .....	3
Core/Science ** .....	5	Core Music or Art .....	3	EH Adv. Comp. ** .....	5
Tech. & Design Electives .....	5	Electives .....	5	Elective .....	5

## SENIOR YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 321 Directing I Fund. ....	3	TH 376 Prod. Mgmt. & TD .....	3	TH 499 Sr. Project .....	4
Tech. & Design Elect. ....	9	Tech. & Design Elect. ....	11	TH 400 Preprof. Practice .....	12
Elective .....	3	.....	.....	.....	.....

## TOTAL - 192 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

## Theatre-Production/Management Major

## FRESHMAN YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 201 Intr. to Theatre .....	3	TH 200 Intr. Acting & Dir. ....	3	TH 261 Costume Const. ....	3
TH 231 Theatre Tech. I .....	3	CSE 100 Comp. Appl. ....	3	TH 284 Dance Tech. ....	2
Core/History ** .....	3	Core/History ** .....	3	Core/History ** .....	3
EH 110 English Comp. ....	5	Elective .....	5	Core/Philosophy ** .....	5
.....		.....		Elective .....	3

## SOPHOMORE YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 240 Theatrical Design .....	3	TH 233 Drafting for Theatre ....	4	TH 271 Play Analysis .....	3
Core Math ** .....	5	Core/Science ** .....	5	Core/Science ** .....	5
U 101 Soc. & Cult. ....	3	EH 220 Great Books I .....	5	EH 221 Great Books II .....	5
MN 310 Prin. Mgt. ....	4	U 102 Polit. Econ. ....	3	U 103 Indiv. & Soc. ....	3

## JUNIOR YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 320 Stage Mgt. ....	3	TH 265 Stage Makeup .....	3	TH 376 Prod Mgt./Tech. Dir. ...	3
TH 371 Hist. Theatre I .....	3	TH 372 Hist. Theatre II .....	3	TH 373 Hist. Theatre III .....	3
Core/Art or Music .....	3	Perf. & Tech. Elect. ....	9	EH Adv. Comp. ** .....	5
Electives .....	6	.....		Elective .....	3

## SENIOR YEAR

TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0	TH 100 Th. Convocation .....	0
TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1	TH 300 Theatre Lab .....	1
TH 321 Directing I Fund. ....	3	Perf. & Tech. Elect. ....	15	TH 499 Sr. Project .....	4
TH 375 Th. Op. & Mgt. ....	4	.....		TH 400 Prof. Internship .....	12
TH 374 Hist. Theatre IV .....	3	.....		.....	
Open Elective .....	3	.....		.....	

TOTAL - 192 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* A course in anthropology, geography, psychology or sociology

# School of Nursing

EDETH K. KITCHENS, *Dean*

THE SCHOOL OF NURSING, established in 1979, offers a program of preparation leading to the degree of Bachelor of Science in Nursing.

The nursing curriculum is designed to prepare beginning professional nurse generalists who are capable of functioning as members of the health-care team in providing care for individuals and groups in diverse settings. The program also provides an educational base allowing for advancement in formal study, research and practice. The facilities and resources of the university are utilized to provide a broad academic background in the humanities and sciences. Graduates are eligible to take the NCLEX-RN examination to become registered nurses.

A pre-professional program in Nursing Science is required of all students seeking admission to the professional curriculum. The first two years of coursework are designated as Pre-Nursing (NS). The Professional Program (NUR) requires six quarters of study, including classroom, laboratory and clinical experiences.

## Curriculum In Pre-Nursing Science (NS)

LEVEL I														
First Quarter					Second Quarter					Third Quarter				
EH	110	Eng. Comp.	5	U	102	Polit. Econ.	3	U	103	Indiv. in Society	3			
U	101	Soc. & Culture	3	HY	101	World Hist.	3	HY	102	World Hist.	3			
MH	160	Pre-Cal. & Trig.	5	SM	101	Concepts of Science	5	CH	102	Intro. Chem.	2			
NUR	101	Orien. to Nursing	2	CH	101	Intro. Chem.*	2	CH	103L	Gen. Chem. Lab	1			
						Core Fine Arts**	3	PG	212	Lifespan Hum. Dev.	5			
										Elective***	3			
LEVEL II														
EH	220	Great Books I	5	EH	221	Great Books II	5	EH	Eng. Comp.***	5				
HY	103	World Hist.	3	ZY	250	Hum. Anat.	5	ZY	251	Physiology	5			
BY	101	Prin. of Biology	5	MB	300	Gen. Microbiol.	5	PA	218	Ethics	5			
NF	200	Nutr. & Health	3			Elective***	3	FED	270	Statistics	3			
TOTAL — 100 QUARTER HOURS														

## Curriculum In Professional Nursing (NUR)

LEVEL III								
NUR	302 Dim. of Prof. Neg.	2	NUR	305 Biomed. Instr.	2	NUR	312 Nsg. Concepts III	12
NUR	310 Nsg. Concepts I	8	NUR	311 Nsg. Concepts II	12	NUR	313 Psy./Men. Hlth. Nsg.	7
ZY	440 Clin. Physiology	3		Elective ***	3			
NUR	303 Health Assess.	4	ZY	441 Clin. Physiology	3			
LEVEL IV								
NUR	422 Fam. & Com. Hlth.	12	NUR	460 Nsg. Concepts IV	12	NUR	450 Sr. Seminar	3
NUR	432 Nsg. Research	3	NUR	435 Info. Mgt. in Nsg.	3	NUR	499 Practicum	15
NUR	495 Mgt. in Nsg.	3		Elective ***	3			
TOTAL — 210 QUARTER HOURS****								

\*Students should take CH 101 unless they have had high school chemistry and scored at least 25 on the ACT or 1130 on the SAT. See advisor for study plan taking CH 103.

\*\*For University Core options to satisfy this requirement, see page 39.

\*\*\*Electives may be chosen from any field.

\*\*\*\*EH 400, 404 or 408

\*\*\*\*\*Required for graduation.

## Admission

Freshman eligibility is determined by the University Admissions Office. Admission requirements are stated elsewhere in this Bulletin. High school mathematics, chemistry and biology courses are strongly recommended, along with other college preparatory courses in social science, history, literature and English composition.

Transfers from other institutions must apply through the University Admissions Office. Review of transcripts by the School of Nursing will determine the amount of credit allowed for the pre-nursing requirements. Students planning to transfer are encouraged to contact the School of Nursing as soon as possible for advisement concerning transferability of credits. An overall grade-point average of at least 2.0 is required of students desiring to transfer into the School of Nursing from another curriculum on campus.

Registered nurses: The School of Nursing offers an Educational Advancement for Registered Nurses (EARN) Program in which RN students may complete the requirements for the B.S.N. degree in one calendar year (four quarters) of full-time study beginning with the summer quarter. A flexible format allows RN students to continue full-time employment. Registered nurse students

must complete the pre-nursing curriculum required of all nursing majors. Advanced placement within the third and fourth levels is determined by standardized testing. The School of Nursing should be contacted for further advisement.

**Professional Program:** Admission to the professional program is open annually in the Fall Quarter. Pre-nursing students must formally apply in February to the School of Nursing. Applicants are notified by June 1 of acceptance or non-acceptance. If the number of qualified applicants exceeds the spaces available, a waiting list will be established for the Fall Quarter of that academic year only. Due to limited enrollment, all students who meet minimal criteria may not be admitted.

Criteria for consideration for admission include a minimum grade-point average of 2.0, completion of the pre-nursing requirements, references and a completed application. The Admissions Committee considers, in addition to the above criteria, general conduct, health and extra-curricular activities. An interview may be required by the School of Nursing.

## **Academic Regulations**

An advisor from the faculty or staff is assigned to each student majoring in nursing. Academic program planning is done with the advisors. Students should consult with their advisors each quarter.

Advanced placement or CLEP credit in pre-nursing courses is granted according to university policies stated elsewhere in the Bulletin. No advanced standing is allowed in the natural sciences by the School of Nursing. Proficiency examinations or Advanced Placement (CEEB), with accepted score, may be used for advanced placement.

An overall grade-point average of 2.0 must be maintained for progression through the professional program. Pre-nursing students who do not attain an overall grade-point average of at least 2.0 at the beginning of the second year should consider alternative fields of study.

A minimal grade of C is required in most pre-nursing courses. Transfer credit will not be granted for courses in which a grade less than C is earned.

In the professional program of the School of Nursing, a minimal grade of C must be achieved in all courses. Because the professional nursing curriculum is designed for progressive development of nursing knowledge and skills, students who earn a grade less than C in a professional program course are not allowed to progress to the next course. The course in which the student earns a grade less than C may be repeated one time only. Students who do not satisfactorily complete a course and whose GPA falls below a 2.0 will be dropped from the professional program and must reapply. Transfer credit is not generally allowed for courses in the professional program.

## **The Professional Program**

### **Facilities**

The School of Nursing is housed in Miller Hall, where classrooms, an auditorium, a skills laboratory, a learning resource and computer center and faculty offices are located.

Facilities for clinical nursing experiences include East Alabama Medical Center and other hospitals in the area, Lee County Mental Health Center, clinics, nursing homes, physicians' offices, Lee County Public Health Department, public schools and industrial sites.

Note: Students are responsible for complying with policies and procedures required by agencies in which clinical work is done.

### **Expenses**

Students accepted into the professional program should expect to incur additional expenses. Uniforms, equipment, transportation to clinical sites, a health examination and liability and health insurance coverage are among the requirements. Detailed information is furnished by the Dean's Office at the time of admission.

### **Accreditation**

The School of Nursing operates with full approval of the Alabama Board of Nursing, and is accredited by the National League for Nursing.

# School of Pharmacy

WILLIAM H. CAMPBELL, *Dean*

CHARLES M. DARLING, *Associate Dean*

THE SCHOOL OF PHARMACY offers two professional degrees and two graduate degrees. The professional degrees are a Bachelor of Science in Pharmacy and a Pharm.D. The graduate degrees, a Master of Science and a Doctor of Philosophy, are described in the *Graduate School Bulletin*.

The Bachelor of Science Curriculum is fully accredited and requires three years in the professional school after completion of two years in the pre-professional program. The Doctor of Pharmacy program requires work beyond the baccalaureate program.

The undergraduate degree in pharmacy is a necessary requisite for licensure for the practice of pharmacy in each of the 50 states and also the territories of the United States. In addition, completion of the program prepares students for careers in those areas of pharmacy not requiring licensure.

Pharmacists provide those personal health services that assure safety and efficacy in the procuring, storing, prescribing, compounding, dispensing, delivering, administering and use of drugs and related articles. Among these services are maintenance of patient medication profiles, monitoring of drug therapy, counseling patients in matters of health and providing health and drug information for nurses, physicians, and other health care practitioners.

Opportunities for graduates exist in community pharmacy, institutional pharmacy, industrial pharmacy (research, product development, analytical control, product manufacture, sales and distribution), wholesale pharmacy, public health, health care funding agencies and regulatory agencies. In addition, there are opportunities in research and teaching in an academic environment.

## Admission

The course requirements for admission to the School of Pharmacy may be satisfied by completion of the six-quarter pre-pharmacy curriculum as outlined in the Pre-Professional Curricula in the College of Sciences and Mathematics. Any or all of these requirements may be met by transfer of credit from other institutions. Transfer students from junior colleges may receive no more than 102 quarter hours credit for the pre-pharmacy curriculum.

Admission is limited and is contingent upon available facilities and faculty. To be considered for admission the applicant must have a satisfactory grade-point average based on all courses attempted as well as a satisfactory science index (grade-point average on all mathematics and science courses). A grade of D on any required course will not be accepted.

Students are accepted into the School of Pharmacy once a year, during fall quarter. Applications should be submitted not later than March 15. To be considered for admission to the School of Pharmacy, the applicant must forward to the Pharmacy Admissions Committee a completed application, a photograph, two interview report forms, two letters of recommendation and complete transcripts of all work attempted, along with a list of courses in progress and courses planned before admission to the pharmacy curriculum. Applicants must appear for a personal interview with the Pharmacy Admissions Committee upon request. Applicants will be notified as to acceptance or denial no later than July 15.

If applicants have not previously attended Auburn University, they must also be accepted by the Admissions Office before their application to the School of Pharmacy can be considered. For university applications write Admissions Office, Auburn University, Alabama, 36849-5145.

Any student in the pharmacy curriculum who is subjected to academic suspension and desires to re-enter the School of Pharmacy must, in addition to complying with the pertinent university regulations, be approved by the Pharmacy Admissions Committee for re-admission.



## Guidelines to Academic Performance

### I. GENERAL

- A. The implementation of all guidelines will be in addition to those existing policies and standards of the University.
- B. Grade-point averages will be calculated only from professional coursework. Professional coursework is defined as those required and elective courses listed in the "Curricula in Pharmacy: Bachelor of Science" and any additional courses approved by the faculty.
- C. The student must observe prerequisites and corequisites stated in the current AU Bulletin.

### II. ACADEMIC STANDARDS

- A. A student must earn passing credit in at least 12 hours of professional coursework to receive one quarter of residency credit. The student who earns passing credit in 6-11 hours of professional coursework will receive one-half quarter of residency credit.
- B. A student must maintain a minimal GPA cumulative record of 2.0 on all professional coursework. A student whose cumulative GPA falls below 2.0 will be placed on academic probation.
  1. The student will remain on probation for the next three quarters of enrollment.
  2. By the end of the probationary period, the student must have earned a 2.0 cumulative GPA or the student's name will be removed from the rolls of the School of Pharmacy.
  3. During the probationary period, the student may take any professional coursework for which the prerequisites have been met. Exception: clerkship and externship courses may not be taken by a student whose School of Pharmacy cumulative GPA is less than 2.0.
  4. A student may not be placed on probation more than once. Instead of a second probation, the student's name will be removed from the rolls of the School of Pharmacy.
  5. A cumulative record of 2.0 in professional coursework is required for graduation in the School of Pharmacy.
- C. All F graded professional coursework must be successfully repeated as soon as the course is offered again.
- D. A course in which a student received a grade of B or A may not be repeated under any conditions.
- E. A course in which a student received a grade of C may be repeated only if all courses in which an F or D had been earned have been successfully repeated with a C or above.
- F. No required course in the professional curriculum may be repeated more than twice.

Appeals to these Guidelines may be made to the Professional and Academic Standards Committee through its chairperson.

## Licensure Requirements \*

The Alabama State Board of Pharmacy (BOARD) regulates (ACT 205) the practice of pharmacy in the state. In brief, the requirements for licensure are:

1. B.S. in Pharmacy or Pharm.D. degree from an accredited School of Pharmacy.
2. A total of 1,500 hours of practical experience under the supervision of a registered preceptor, 400 hours of which must be completed after graduation.
3. Students are eligible to and should file an application with the BOARD for registration as an extern/intern at the time they enroll in the School of Pharmacy. Periods of any work experience must be reported to the Secretary of the Board within 10 days of beginning and within 10 days after ending the experience or at intervals of 16 weeks, whichever first occurs.
4. Graduates of accredited schools of pharmacy are eligible to take the BOARD examination. Applications for taking the BOARD examination may be picked up in the dean's office.
5. The Office of the Dean of the School of Pharmacy will be glad to respond to questions on licensure. Alternatively, request for information can be referred directly to: Mr. J. W. McLane, Secretary, Alabama State Board of Pharmacy, One Perimeter Park South, Suite 425 So., Birmingham, Ala. 35243.

## Continuing Education and Extension Services

Continuing education and extension service programs are available to pharmacists throughout the year. Faculty members of the School of Pharmacy, as well as practicing pharmacists and industry leaders and consultants in state and federal governmental agencies serve as instructors.

The Alabama Board of Pharmacy requires 15 clock hours of approved continuing education as a requirement for renewal of each pharmacist's controlled substances permit.

## Curricula In Pharmacy

### Bachelor of Science

#### FIRST PROFESSIONAL YEAR

First Quarter			Second Quarter			Third Quarter		
ZY	560 Mammalian Phys. I	5	ZY	561 Mammalian Phys. II	5	PC	347 Human Pathology	5
CH	518 Biochemistry	4	CH	519 Biochemistry	4	CH	521 Biochemistry	4
PY	301 Pharmaceutics I	4	PY	302 Pharmaceutics II	4	EH	Adv. Comp.*	5
PCS	261 Pharm. H&O	3	PCS	361 Drug Lit. Anal.	3	PY	316 Mod. Mth. Drg. An.	4

#### SECOND PROFESSIONAL YEAR

Fourth Quarter			Fifth Quarter			Third Quarter		
PY	420 Med. Chem. I	5	PY	421 Med. Chem. II	5	PY	422 Med. Chem. III	5
PY	531 Pharmacology I	5	PY	532 Pharmacology II	5	PY	533 Pharmacology III	5
PY	401 Pharmaceutics III	4	PC	447 Therapeutics II	4	PC	448 Therapeutics III	4
PC	446 Therapeutics I	4	PCS	562 Intr. Med. Info. Syst.	3	PY	403 P'cut. IV & Lab.	4
			PC	452 Drug Info. Orient.	2	PCS	471 Prof. Comm. I	3

#### THIRD PROFESSIONAL YEAR

Fall or Winter Quarter			SU/FA or W/SP			SU/FA or W/SP		
PCS	464 Jurisprudence	5	PC	461 Clerkship Elect.	8	PC	458 Inst. Extnshp.	8
PCS	465 Phar. Oper. Sys.	5	PC	460 Clerkship	8	PC	459 Comm. Extnshp.	8
	Prof. Electives	9						

**TOTAL — 159 QUARTER HOURS (B.S.)**

\*For University Core options to satisfy this requirement, see page 39.

#### NOTES:

1. Proficiency in typing is required of all entering students.
2. Students are encouraged to participate in field trips to a pharmaceutical manufacturing plant during their junior or senior year, and to a wholesale drug company during their senior year.
3. A set of Class C, metric and Apothecaries' weights, which may be purchased from ASP, is required for Pharmacy laboratories.
4. Students enrolled in clerkship or externship courses are required to furnish personal professional liability insurance.
5. All pharmacy elective courses are acceptable for option credit. Faculty advisors will provide information on any non-pharmacy elective courses which are acceptable.
6. A student who is qualified and has the prerequisites may take up to 10 hours of graduate coursework in the fifth year; however, such work cannot be applied toward both the undergraduate and graduate degrees.

## Doctor of Pharmacy

Baccalaureate graduates of accredited schools/colleges of pharmacy are eligible for admission to the program. Individuals interested in applying to the program should submit an application to the Doctor of Pharmacy Program Admissions Committee prior to January 15 preceding the summer quarter in which admission is desired. The program is designed to interface with the baccalaureate curriculum, but at this time the program is in addition to the baccalaureate program and of limited enrollment.

The Doctor of Pharmacy curriculum consists of a didactic and a clerkship phase. The didactic phase is a sequence of courses taught in the classroom setting on the Auburn campus. The clerkship phase is experiential learning taught at University Hospital in Birmingham and at other affiliated clinical sites in the region.

### Doctor of Pharmacy Curriculum

First Quarter			Second Quarter			Third Quarter		
PC	501 Drug Info. Ret. & An.	4	PC	503 Research Methods II	3	PC	521 Appl. P'cokinetics	4
PC	502 Research Methods I	3	PY	502 Pharmacokinetics	5	PC	512 Adv. Therapeu. III	6
PC	510 Adv. Therapeutics I	6	PC	511 Adv. Therapeutics II	6	PC	530 Adv. Patient Mon.	3
PC	520 Drug-Induced Disease	3				PCS	531 Clin. Phar. Adm.	2

#### SPRING/SUMMER/FALL/WINTER QUARTERS

PC	540 Orientation to the Clinical Environment*	2
PC	541 Psychosocial Issues in Clinical Practice	1
PC	542 Clinical Seminar	1
PC	550 Clerkship — Drug Information	9
PC	551 Clerkship — Clinical Pharmacokinetics I	9
PC	553 Clerkship — Ambulatory Care	9
PC	554 Clerkship — General Internal Medicine	9
	Four Elective Clerkships (five weeks each)	36

\*PC 540 will be completed in a two-week period prior to beginning clerkships; hence, the clerkship phase will require 42 weeks.

**TOTAL — 121 QUARTER HOURS (PHARM.D.)**



MUSLIM UNIVERSITY CHAPEL

# College of Sciences and Mathematics

J. IVAN LEGG, *Dean*

WILLIAM L. ALFORD, *Associate Dean for Research*

LAWRENCE C. WITT, *Acting Associate Dean for Academic Affairs*

THE COLLEGE OF SCIENCES AND MATHEMATICS provides programs in the physical sciences, life sciences and mathematical sciences at both the undergraduate and graduate levels. In addition, the College offers scientific and mathematical service courses for students enrolled in most of the other colleges and schools. The College includes the following academic areas: Biochemistry, Botany, Chemistry, Geology, Mathematics, Microbiology, Physics, Biological Statistics, Wildlife Science and Zoology. The Arboretum, Nuclear Science Center, and Plant Molecular Genetics Laboratory are also included in the College of Sciences and Mathematics.

## Undergraduate Degrees

1. Four-year bachelor's degree programs are offered in two areas:

a. Departmental Curricula are available in botany, chemistry, chemistry with biochemistry option, geology, earth science, laboratory and medical technology, microbiology, molecular biology, marine biology, mathematics, applied mathematics, physics, applied physics, wildlife science, and zoology.

b. Pre-professional Programs are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-dental hygiene, pre-occupational therapy, pre-pharmacy and pre-veterinary medicine.

Embodied in these curricula are the requirements of the University Core Curriculum.

2. Admission — The academic requirements and demands on majors in sciences and mathematics necessitate a high school preparation of high intellectual quality. The following is recommended as a minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry and analytical geometry), four units; chemistry, one unit; biology, one unit; history, literature, social science, two or three units. Both physics and foreign language are highly recommended.

Transfers from other institutions must apply through the Admissions Office. The College of Sciences and Mathematics allows credit for courses completed with grades of C or better provided the courses contain equivalent content to Auburn courses or can be logically substituted for Auburn courses. Junior college credit is disallowed for courses taught at Auburn on the 300-level or higher.

Transfers from on-campus may declare a major in the College of Sciences and Mathematics if they: (1) have a cumulative Auburn grade-point average of at least 2.0 (on all work attempted) and (2) have completed at least 10 hours of Auburn University coursework in the desired major with at least a 2.0 grade-point average in all such courses. Courses in the major are those carrying the appropriate prefix(es) of the intended curriculum. Students not meeting these standards may enroll in the General Sciences and Mathematics (GSM) curriculum if they have not reached senior standing (144 hours). Students in the GSM curriculum may declare a Sciences and Mathematics major after satisfying the above requirements. A student who enters the GSM curriculum because he/she is not qualified to declare a major can remain in GSM for a maximum of four quarters or until senior standing is reached. If after this time the student is still not qualified to declare a major, he/she will be disenrolled from the College of Sciences and Mathematics.

Academic Residency Requirements — Newly enrolled students in the College of Sciences and Mathematics will be issued an academic warning at the end of any quarter in which: (1) the cumulative grade-point average drops below 2.0, or (2) the grade-point average in the major, excluding 100-level courses, is less than 2.0. Any student issued an academic warning, except a freshman with fewer than three quarters in residence, will be transferred to the GSM curriculum at the end of any quarter in which the grade-point deficiency\* in the major exceeds 13. Students who are removed from a major must bring the grade-point average in the major (excluding 100-level courses) up to 2.0 within four quarters, or they will be disenrolled from the College of Sciences and Mathematics. If a student is a senior at the time he/she is removed from a major, or if one becomes a senior while designated GSM, he/she is likewise disenrolled. A student cannot graduate while enrolled in the GSM curriculum.

\* See section on "Probation" in this *Bulletin* for an explanation on how to compute grade-point deficiency.

## Graduate Degrees

Master of Science and Doctor of Philosophy degrees are offered in the College of Sciences and Mathematics. Degree programs are described in the *Graduate School Bulletin*.

## Dual Degree Program in Engineering

This program provides for enrollment in a curriculum of the College of Sciences and Mathematics for approximately three academic years and in the College of Engineering for approximately two academic years.

The student must complete the basic requirements of the Liberal Education Program and the requirements for a major within a department in the College of Sciences and Mathematics. The student is not required to complete any minors or take the usual number of hours of electives. Thus, he/she may transfer to the College of Engineering after the end of the junior year. Following completion of the academic requirements for one of the 11 baccalaureate degrees in the College of Engineering, two degrees will be awarded: a Bachelor of Science degree in the Sciences and Mathematics major, and a bachelor's degree in the designated engineering field.

## Curriculum in Materials Engineering

An interdisciplinary curriculum in materials engineering is administered by the Department of Mechanical Engineering in the College of Engineering. It is conducted cooperatively by academic departments of the College of Engineering and the College of Sciences and Mathematics through a faculty Materials Engineering Curriculum Committee.

## Curriculum in Geological Engineering

An interdisciplinary curriculum in geological engineering is administered by the Department of Civil Engineering in the College of Engineering. It is conducted cooperatively by the Department of Civil Engineering and the Department of Geology in the College of Sciences and Mathematics.

## Teacher Education

Students with majors in mathematics or the sciences who wish also to prepare for certification as teachers in secondary schools may pursue the dual objective of completing the requirements for the B.S. degree in their major and the requirements of the Teacher Education Program.

Students who choose the dual objective program should declare this intent to their departmental advisors by the end of their sophomore year. Students pursuing the dual objective plan will be assigned an advisor in the College of Education who will advise them on all matters involving requirements for completing the Teacher Education Program. See detailed discussion of admission and retention procedures for teacher education elsewhere in this *Bulletin*.

## Cooperative Education Programs

Cooperative Education Programs give students an opportunity to integrate their academic training with relevant work experience. Students alternate between school and a work assignment provided through the Director of the Cooperative Education Program.

## Advisory Services for Students

Before a major is declared, the office of the Dean provides counseling services to the student. After a major is declared, the head of the department (or his designee) in which the student majors becomes the student's advisor and is charged with outlining the student's major and minor work.

## The University Honors Program

This program offers individual learning opportunities, the possibility of accelerated entry into a master's program, and participation in honors courses to entering freshmen with extraordinarily high academic aptitude.

## The General Sciences and Mathematics Curriculum (GSM)

This curriculum is primarily for freshmen who have not decided on a specific major field of study as well as for transfer students having deficiencies which preclude their acceptance in a degree program. Freshmen entering this curriculum must declare a major by the end of their fourth quarter. Transfer students must complete a specific approved program designed to clear their admission to a major field of study.



## The General Curriculum (GSM)

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
EH	110 Eng. Comp.	5		Foreign Language*	5		Foreign Language	5
	Science Requisite**	4-5		Science Requisite**	4-5		Science Requisite**	4-5
MH	161 An. Geom. & Calc.***	5	MH	162 An. Geom. & Calc.	5	MH	163 An. Geom. & Calc.	5
U	101 Soc. & Culture	3	U	102 Polt. Econ.	3	U	103 Indiv. in Soc.	3
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

\*Students with a strong background in foreign language are encouraged to complete a year of language in the freshman year.

\*\*Science requirement must be satisfied by taking courses from the following sequences: BI 101-102-103; CH 103-104-105 or CH 111-112-113 and labs; GL 110-111 and 240; or PS 205-206-207 or PS 220-221-222 and labs.

\*\*\*Students not prepared for MH 161 must pass MH 160.

## Departmental Curricula

Departmental curricula leading to the Bachelor of Science degree include botany, chemistry, chemistry with biochemistry option, geology, earth science, microbiology, molecular biology, marine biology, laboratory and medical technology, mathematics, applied mathematics, physics, applied physics, wildlife science and zoology.

## Botany

The Botany major is for students interested in fundamental plant sciences. The required courses serve as a basis of knowledge of plants and future experimentation with plant systems. Proper elective selection prepares students for various careers in the plant sciences.

## Curriculum in Botany (BY)

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
BI	101 Prin. of Biology	5	BI	102 Plant Biology	5	BI	103 Animal Biology	5
MH	161 An. Geom. & Cal. *	5	MH	162 An. Geom. & Cal.	5	CH	104 Fund. Chem.	4
EH	110 English Comp.	5	CH	103 Fund. Chem.	4	CH	104 Fund. Chem. Lab	1
U	101 Soc. & Cult.	3	CH	103 Fund. Chem. Lab	1		MH Elect. or BST 215	5
			U	102 Polt. Econ.	3	U	103 Indiv. & Soc.	3
			SOPHOMORE YEAR					
CH	207 Org. Chem.	4	CH	208 Org. Chem.	3	ZY	300 Genetics	5
CH	207 Org. Chem. Lab	1	CH	208 Org. Chem. Lab	2		Core/Fine Arts **	3
	Core/History **	3		Core/History **	3		Core/History **	3
	Foreign Language ***	5		Foreign Language	5	PA	102 Intro. to Ethics	5
EH	220 Great Books I	5	EH	221 Great Books II	5			
			JUNIOR YEAR					
BY	306 Fund. Plant Phys.	5	BY	405 Intr. Mol. Gen.	4	BY	506 or 513	5
EH	Adv. Comp. **	5	PS	205 Intro. Physics	3	PS	206 Intro. Physics	3
	Electives	6	PS	205 Phys. Lab	2	PS	206 Phys. Lab	2
				Electives	6		Electives	6
			SENIOR YEAR					
BY	Spec. Prob. ****	3	BY	Spec. Prob. ****	3		Electives	15
BY	Elective	5	BY	Elective	5			
	Electives	8		Electives	8			

## TOTAL — 199 QUARTER HOURS

\* Students not prepared for MH 161 must pass MH 160.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Any foreign language acceptable

\*\*\*\* Special Problems requirements are arranged in consultation with advisor.

In consultation with an advisor, 10 hours of BY electives and 20 hours of additional electives will be scheduled. These electives preferably should be selected from one of the following two lists depending upon area of interest or concentration. Basic and advanced ROTC up to a total of 12 quarter hours may be scheduled from remaining free electives. List A: BY 460, 470, 505, 506, 507, 509, 510, 513, 514, 517, 518; GL 205; PLP 309; ZY 241, 303, 306, 436, 516, 517. List B: BY 460, 470, 514, 550, 554; CH 518, 518L, 519, 519L, 521; MB 300, 490, 522, 522L, 540, 542, 543, 543L, 545; ZY 310, 519.

## Program in Biological Statistics (BST)

The program in Biological Statistics is administered by the Department of Botany and Microbiology. The program is designed to provide undergraduate students with an introduction to statistics, computer applications and computer programming. Graduate students with interest in life sciences may obtain a minor in applied biological statistics if they so desire.

## Chemistry

This American Chemical Society accredited curriculum prepares students for careers in both pure and applied chemistry with a dual emphasis on classroom and laboratory experience. A flexible senior year allows students to tailor the program to their individual professional goals.

Graduates will be prepared to enter the profession immediately or continue for advanced degree programs. The senior research program is designed to introduce students to modern advanced techniques and approaches to chemical research in an area of their interests by completing an individual research project in conjunction with a faculty advisor.

# Curriculum in Chemistry (CH)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH	111 General Chem. .... 4	CH	112 General Chem. .... 4	CH	113 General Chem. .... 4
CH	111L Gen. Chem. Lab. .... 1	CH	112L Gen. Chem. Lab. .... 1	CH	113L Gen. Chem. Lab. .... 1
MH	161 An. Geom. & Cal. .... 5	MH	162 An. Geom. & Cal. .... 5	MH	163 An. Geom. & Cal. .... 5
EH	110 Eng. Comp. .... 5		Core/History** .... 3		Core/History** .... 3
	ROTC or Elective .... 1		ROTC or Elective .... 1		ROTC or Elective .... 1

## SOPHOMORE YEAR

CH	207 Organic Chemistry .... 4	CH	208 Organic Chemistry .... 3	CH	209 Org. Chemistry .... 4
CH	207L Organic Chem. Lab. .... 1	CH	208L Organic Chem. Lab. .... 2	CH	209L Org. Chem. Lab. .... 2
MH	264 An. Geom. & Cal. .... 5	MH	265 Lin. Diff. Equations .... 3	MH	266 Top. Lin. Algebra .... 5
PS	220 Gen. Physics I .... 3	PS	221 Gen. Physics II .... 3	PS	222 Gen. Physics III .... 3
PS	220L Gen. Physics Lab. .... 1	PS	221L Gen. Physics Lab. .... 1	PS	222L Gen. Physics Lab. .... 1
	Core/History** .... 3	EH	220 Great Books I .... 5	EH	221 Great Books II .... 5
	ROTC or Elective .... 1		ROTC or Elective .... 1		ROTC or Elective .... 1

## JUNIOR YEAR

CH	507 Physical Chemistry .... 4	CH	508 Physical Chemistry .... 4	CH	509 Physical Chemistry .... 4
CH	507L Physical Chem. Lab. .... 1	CH	508L Physical Chem. Lab. .... 1	CH	509L Phys. Chem. Lab. .... 1
FL	Foreign Language* .... 5	FL	Foreign Language .... 5	FL	Foreign Language .... 5
EH	400 or EHA 404 .... 5	CH	305 Anal. Chem. .... 3	CH	513 Anal. Chemistry .... 5
		CH	305L Anal. Chem. Lab. .... 2	PS	305 Modern Physics .... 4

## SENIOR YEAR

CH	510 Int. Inorg. Chem. .... 5	CH	511 Int. Inorg. Chem. II .... 5	U	103 Indiv. in Soc. .... 3
CH	504 Intr. MO Meth. # .... 5	CH	512 Chem. Thermo. ## .... 5		Elective .... 6
CH	490 Spec. Prob. Chem. .... 5	U	102 Polit. Econ. .... 3		Core/Philosophy** .... 5
U	101 Soc. & Cult. .... 3		Core/Fine Arts ** .... 3		

## TOTAL — 108 QUARTER HOURS

\* German, French, Japanese, or Russian through the first year sequence.

\*\* For University Core options to satisfy these requirements, see page 39.

# Or CH 518/518L.

## Or CH 518/518L or 519/519L.

# Curriculum in Biochemistry (BCH)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH	111 General Chem. .... 4	CH	112 General Chem. .... 4	CH	113 General Chem. .... 4
CH	111L Gen. Chem. Lab. .... 1	CH	112L Gen. Chem. Lab. .... 1	CH	113L Gen. Chem. Lab. .... 1
MH	161 An. Geom. & Cal. .... 5	MH	162 An. Geom. & Cal. .... 5	MH	163 An. Geom. & Cal. .... 5
EH	110 Eng. Comp. .... 5		Core/History** .... 3	BI	101 Prin. Biol. .... 5
	ROTC or Elective .... 1		Core/Fine Arts ** .... 3		ROTC or Elective .... 1

## SOPHOMORE YEAR

CH	207 Organic Chemistry .... 4	CH	208 Organic Chemistry .... 3	CH	209 Org. Chemistry .... 4
CH	207L Organic Chem. Lab. .... 1	CH	208L Organic Chem. Lab. .... 2	CH	209L Org. Chem. Lab. .... 2
MH	264 An. Geom. & Cal. .... 5	MH	265 Lin. Diff. Equations .... 3		Core/History** .... 3
PS	220 Gen. Physics I .... 3	PS	221 Gen. Physics II .... 3	PS	222 Gen. Physics III .... 3
PS	220L Gen. Physics Lab. .... 1	PS	221L Gen. Physics Lab. .... 1	PS	222L Gen. Physics Lab. .... 1
	Core/History** .... 3	EH	220 Great Books I .... 5	EH	221 Great Books II .... 5
	ROTC or Elective .... 1		ROTC or Elective .... 1		ROTC or Elective .... 1

## JUNIOR YEAR

CH	507 Physical Chemistry .... 4	CH	508 Physical Chemistry .... 4	CH	509 Physical Chemistry .... 4
CH	507L Physical Chem. Lab. .... 1	CH	508L Physical Chem. Lab. .... 1	CH	509L Phys. Chem. Lab. .... 1
U	101 Soc. & Cult. .... 3	ZY	310 Cell Biology .... 4	BY	300 Microbiology .... 5
EH	400 or EHA 404 .... 5	CH	305 Anal. Chem. .... 3	ZY	524 An. Physiology .... 5
	Elective .... 3	CH	305L Anal. Chem. Lab. .... 2	U	103 Indiv. in Soc. .... 3
		U	102 Polit. Econ. .... 3		

## SENIOR YEAR

CH	518 Biochemistry .... 4	CH	511 Int. Inorg. Chem. II .... 5	CH	521 Biochemistry .... 4
CH	518L Biochemistry Lab. .... 1	CH	519 Biochemistry .... 4	CH	513 An. Chemistry .... 5
CH	510 Int. Inorg. Chem. .... 5	CH	519L Biochemistry Lab. .... 1		Elective .... 6
CH	490 Spec. Prob. Chem. .... 5		Core/Philosophy** .... 5		

## TOTAL — 200 QUARTER HOURS

\*\* For University Core options to satisfy these requirements, see page 39.

## Geology

This curriculum prepares the student broadly in geology for an intelligent selection of employment or of a graduate program of study that will permit specialization in one or more of the many aspects of the science. Geological employment ranges from federal and state service through university/college and industrial programs to private consulting. The following four-year program satisfies requirements for a Bachelor of Science degree

### Curriculum in Geology (GL)

#### FRESHMAN YEAR

##### First Quarter

BI	101 Prin. of Biology	5
GL	110 Physical Geology	5
EH	110 English Comp.	5
HY	101 or 121	3

##### Second Quarter

BI	102 Plant Biology	5
GL	111 Hist. Geology	5
PA	102 Intr. Ethics	5
HY	102 or 122	3

##### Third Quarter

BI	103 Animal Biology	5
MH	161 An. Geom. & Cal. #	5
HY	103 or 123	3
	Elective	3

#### SOPHOMORE YEAR

EH	220 Great Books I	5
MH	162 An. Geom. & Cal.	5
CH	103 Fund. Chem. ##	4
CH	103L Gen. Chem. Lab	1

GL	205 Paleobotany	5
MH	163 An. Geom. & Cal.	5
CH	104 Fund. Chem.	4
CH	104L Gen. Chem. Lab	1

GL	240 Struct. & Geotect.	5
EH	221 Great Books II	5
CH	105 Fund. Chem.	4
CH	105L Gen. Chem. Lab	1
	Elective	3

During the Summer Quarter following the sophomore year, the student should take GL 215 (6) and GY 440 (5).

#### JUNIOR YEAR

GL	206 Inv. Paleozoology	5
GL	301 Mineralogy	5
PS	205 Intr. Physics I	3
PS	205 Intr. Phys. Lab	1
U	101 Soc. & Cult.	3

GL	302 Optical Min.	5
PS	206 Intr. Phys. II	3
PS	206 Intr. Phys. Lab	1
	Elective	3
U	102 Polit. Econ.	3

GL	305 Ign. & Met. Pet.	5
EH	400 Adv. Comp. **	5
PS	207 Intr. Phys. III	3
PS	207 Intr. Phys. Lab	1
U	103 Indiv. in Soc.	3

#### SENIOR YEAR

GL	401 Sed. Pet.	5
	Minor	5
	Minor	5

GL	411 Stratigraphy	5
	Minor	5
	Core/Fine Arts **	3

GL	421 Econ. Geology	5
	Minor	5
	Elective	3
	Elective	3

#### TOTAL — 204 QUARTER HOURS

\*Students not prepared for MH 161 must pass MH 160.

\*\*Chemistry may be started with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

MINORS. Twenty hours in another department or in sequence of related courses at the 200-level or above. See advisor for details.

## Earth Science

This curriculum prepares the student for employment with environmental, geological, and/or engineering consulting firms, federal or state agencies or support companies in the petroleum industry. It is also an excellent option for those wishing to combine majors (with business, civil engineering, education or law, for example) for broader employment potential or graduate studies. The following four-year program satisfies the requirements for a Bachelor of Science degree.

### Curriculum in Earth Science (GES)

#### FRESHMAN YEAR

##### First Quarter

BI	101 Prin. of Biology	5
GL	110 Physical Geology	5
EH	110 English Comp.	5
HY	101 or 121	3

##### Second Quarter

BI	102 Plant Biology	5
GL	111 Hist. Geology	5
PA	101 Logic	5
HY	102 or 122	3

##### Third Quarter

BI	103 Animal Biology	5
MH	161 An. Geom. & Cal. #	5
HY	103 or 123	3
	Elective	3

#### SOPHOMORE YEAR

EH	220 Great Books I	5
BST	215 Intr. Bio. Stat.	5
CH	103 Fund. Chem. ##	4
CH	103L Gen. Chem. Lab	1
	Elective	3

EH	221 Great Books II	5
GL	Geology Elective	5
CH	104 Fund. Chem.	4
CH	104L Gen. Chem. Lab	1
U	101 Soc. & Cult.	3

GL	240 Struct. Geology	5
GY	440 Cartography	5
CH	105 Fund. Chem.	4
CH	105L Gen. Chem. Lab	1
U	102 Polit. Econ.	3

During the Summer Quarter following the sophomore year, the student should take GL 215 (6) and GL 231 (2).

#### JUNIOR YEAR

FL	Foreign Lang.	5
GL	301 Mineralogy	5
U	103 Indiv. in Soc.	3
	Computer Science	3

FL	Foreign Lang.	5
GL	Geology Elective	5
PS	205 Int. Phys. I & Lab	3
PS	205 Physics Lab	1
	Core/Fine Arts **	3

EH	Adv. Comp. **	5
FL	Foreign Lang.	5
PS	206 Int. Phys. II	3
PS	206 Physics Lab	1

# College of Sciences and Mathematics

## SENIOR YEAR

GL	Geol. Elective .....	5	Minor .....	5	GL	Geol. Elective .....	5
PS	207 Int. Phys. III .....	3	Minor .....	5		Minor .....	5
PS	207 Physics Lab .....	1	Elective .....	5		Elective .....	5
	Elective .....	4					

## GEOLOGY ELECTIVES (20 HOURS)

A minimum of one course from each group. GROUP 1: GL 205, 206. GROUP 2: GL 302, 305, 421. GROUP 3: GL 401, 411.

## TOTAL — 204 QUARTER HOURS

# Students not prepared for MH 161 must pass MH 160.

## Chemistry may be started with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

MINORS. Fifteen hours in another department or in sequence of related courses. See advisor for details.

## Laboratory Technology and Medical Technology

This curriculum, leading to the degree of Bachelor of Science in Laboratory Technology or Bachelor of Science in Medical Technology, is designed to prepare students for medical laboratory careers in fields such as public health, bacteriology, environmental testing, industrial quality control, research and forensic science. Graduates of this curriculum may choose to qualify as certified medical technologists. This can be accomplished by successfully completing a 12-month training period (rotating hospital internship) in an accredited School of Medical Technology and passing a national certifying examination.

The requirement for the degree of Bachelor of Science in Laboratory Technology is the successful completion of the 12 quarters of the laboratory technology curriculum. Upon graduation a student may enter the work force in a laboratory field or may choose to begin a 12-month training period in a School of Medical Technology. Upon completion of the training and successful completion of a national certifying examination, the graduate will be certified as a medical technologist.

The Medical Technology option leads to the Bachelor of Science degree in Medical Technology (conferred by Auburn University). Degree requirements include successful completion of the first nine quarters of the laboratory technology curriculum and of the 12-month period in a School of Medical Technology approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and by the head of the Department of Chemistry at Auburn University. This school must be affiliated with Auburn University. Graduates of this curriculum should plan to become certified medical technologists by passing one of the national certifying examinations administered by an approved certifying body.

Further requirements for the Medical Technology Option include: (1) Auburn University students transferring into medical technology must complete one academic year (54 hours) in the laboratory technology curriculum preceding the year of internship, and (2) transfers from other institutions must complete the junior year of the laboratory technology curriculum at Auburn prior to internship.

## Curriculum in Laboratory Technology (LT)

### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	103 Fund. Chem. ....	4	CH	104 Fund. Chem. ....	4	CH	105 Fund. Chem. ....	4
CH	103L Lab. ....	1	CH	104L Lab. ....	1	CH	105L Lab. ....	1
EH	110 English Comp. ....	5	MH	161 An. Geom. & Cal. ....	5	PA	218 Ethics & Hlth. Sci. ....	5
	Core/History ** .....	3		Core/History ** .....	3		Core/History ** .....	3
LT	101 Orientation .....	1	BI	101 Prin. Biology .....	5	PS	200 Fnd. of Physics .....	5
	ROTC or Elective .....	1		ROTC or Elective .....	1		ROTC or Elective .....	1

### SOPHOMORE YEAR

CH	207 Org. Chem. ....	4	CH	208 Org. Chem. ....	3	CH	305 Anal. Chem. ....	3
CH	207L Lab. ....	1	CH	208L Lab. ....	2	CH	305L Lab. ....	1
EH	220 Great Books I .....	5	ZY	251 Physiology .....	5	MB	300 Microbiology .....	5
ZY	250 Human Anatomy .....	5	EH	221 Great Books II .....	5	ZY	300 Genetics .....	5
	Comptr. Prog.* .....	3	U	101 Soc. & Cult. ....	3		ROTC or Elective .....	1
	ROTC or Elective .....	1		ROTC or Elective .....	1			

### JUNIOR YEAR

LT	301 Hematology I .....	5	LT	401 Adv. Hematology .....	5	LT	405 Immunohem. ....	5
MB	446 Clin. Microb. ....	5	MB	543 Immunology .....	5	ZY	511 Parasitology .....	5
U	102 Polit. Econ. ....	3	MB	543L Immuno. Lab. ....	2	U	103 Indiv. in Soc. ....	3
	Core/Fine Arts** .....	3		Statistics*** .....	5	EH	400 or EH404 .....	5

## SENIOR YEAR

LT 525 Clin. Instr. ....	5	CH 519 Biochem. ....	4	CH 520 Clin. Biochem. ....	5
CH 518 Biochem. ....	4	ZY 519 Molecular Genetics ....	3	MB 522 Gene E&R DNA ....	5
Tech. Elective ....	7	Tech. Elective ....	5	Tech. Elective ....	5

## TOTAL - 200 QUARTER HOURS

\* One computer programming course may be selected from MN 207 or CSE 204 or BST 210 or BST 216

\*\* For University Core options to satisfy this requirement, see page 39.

\*\*\* Statistics: Select either BST 215 or PG 315.

Technical Electives: BY 505, 514; LT 422; PS 206, 207; PY 316, 535, ZY 303, 310, 440, 441, 509, 520, 524 and up to six hours advanced ROTC.

Students are urged to select courses from the technical electives to give them an area of expertise.

## Curriculum in Medical Technology (MDT)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 103 Fund. Chem. ....	4	CH 104 Fund. Chem. ....	4	CH 105 Fund. Chem. ....	4
CH 103L Lab ....	1	CH 104L Lab ....	1	CH 105L Lab ....	1
EH 110 English Comp. ....	5	MH 161 An. Geom. & Calc. ....	5	PA 218 Ethics & Hith. Sci. ....	5
Core/History ** ....	3	Core/History ** ....	3	Core/History ** ....	3
LT 101 Orientation ....	1	BI 101 Prin. Biology ....	5	PS 200 Fnd. of Physics ....	5
ROTC or Elective ....	1	ROTC or Elective ....	1	ROTC or Elective ....	1

## SOPHOMORE YEAR

CH 207 Org. Chem. ....	4	CH 208 Org. Chem. ....	3	CH 305 Anal. Chem. ....	3
CH 207L Lab ....	1	CH 208L Lab ....	2	CH 305L Lab ....	2
EH 220 Great Books I ....	5	ZY 251 Physiology ....	5	MB 300 Microbiology ....	5
ZY 250 Human Anatomy ....	5	EH 221 Great Books II ....	5	U 102 Polit. Econ. ....	3
Comptr. Prog. * ....	3	U 101 Soc. & Cult. ....	3	Core/Fine Arts ** ....	3
ROTC or Elective ....	1	ROTC or Elective ....	1	ROTC or Elective ....	1

## JUNIOR YEAR

CH 518 Biochemistry ....	4	CH 519 Biochemistry ....	4	CH 520 Clin. Biochem. ....	5
LT 301 Hematology I ....	5	LT 401 Adv. Hematology ....	5	LT 405 Immunohemat. ....	5
MB 446 Clin. Micro. ....	5	MB 543 Immunology ....	4	ZY 511 Parasitology ....	5
U 103 Indiv. in soc. ....	3	MB 543L Immuno. Lab ....	2	EH 400 or 404 ....	5
		Statistics *** ....	5		

MEDICAL TECHNOLOGY OPTION - (PROFESSIONAL YEAR) - A 12-month training program undertaken at an accredited School of Medical Technology.

## SENIOR YEAR

MDT 406 Cl. Hematology ....	7	MDT 402 Cl. Microbiol. ....	7	MDT 425 Chemistry ....	11
MDT 408 Immunohem. ....	5	MDT 405 Cl. Parasitology ....	2	MDT 401 Urinalysis ....	1
		MDT 407 Cl. Serology ....	2		

## TOTAL - 200 QUARTER HOURS

\* Computer Programming courses may be selected from MN 207, CSE 204, BST 210, or BST 216.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Statistics: Select either BST 215 or PG 315.

## Mathematics

This curriculum is designed to prepare students for graduate study and eventual careers as mathematicians. In order to graduate with a major in mathematics, a student must have an overall C average or better in all mathematics courses attempted above the 100-level, for which a grade other than W has been assigned.

## Curriculum in Mathematics (MH)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 161 An. Geom. & Calc. * ....	5	MH 162 An. Geom. & Calc. ....	5	MH 163 An. Geom. & Calc. ....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
HY 101 World History ....	3	HY 102 World History ....	3	HY 103 World History ....	3
EH 110 Eng. Comp. ....	5	Elective ....	5	Core/Philosophy ** ....	5

## SOPHOMORE YEAR

MH 264 An. Geom. & Calc. ....	5	MH 337 Intr. Lin. Alg. ....	5	MH 269 Elem. Dif. Eq. ....	5
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	MH 333 Group Theory ....	3
Natural Science *** ....	4-5	Natural Science ....	4-5	Natural Science ....	4-5
Elective ### ....	3	Elective ....	3	Core/Fine Arts ** ....	3

## JUNIOR YEAR

FL Foreign Lang. # ....	5	FL Foreign Lang. # ....	5	FL Foreign Lang. ....	5
MHC/MHT 520 Analysis ....	5	MHC/MHT 521 Analysis ....	5	MHC/MHT 522 Analysis ....	5
MH 334 Intr. Th. Rings ....	3	MHC 533 Elem. Fid. theory ....	3	MHC 534 Galois Th. ....	3
EH Adv. Comp. ** ....	5	Elective ....	3	MH Elective ....	3-5



## SENIOR YEAR

MH	Requisite ##	3-5	MH	Requisite ##	5	MH	Requisite ##	5
MHT	550 Intr. Topology	5		Elective	5		Elective	5
Elective		5		Elective	5		Elective	5
Elective		3						

## TOTAL — 196 QUARTER HOURS

\* Students not prepared for MH 161 must pass MH 160.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* The natural science requirement may be met by taking PS 220-221-222 or CH 111-112-113, plus labs. If the 12-hour physics sequence is selected, an additional 3-hour elective will be needed to meet the 196-hour requirement.

§ Required is one year of one language to be chosen from French, German or Spanish.

## MH Requisite: MH, MHC or MHT courses numbered 300 or above subject to approval of advisor.

### Appropriate electives to meet the interests of the student may be selected in consultation with the departmental advisor.

## Applied Mathematics

This is a mathematics curriculum suitable for those preparing for graduate work in mathematics as well as for those anticipating careers supported by significant applied mathematics.

An important feature is the option for the student to concentrate, by means of technical electives, on an area to which mathematics can be applied: one of the traditionally allied fields, such as engineering, physical science or computer science; or the more recently allied areas such as the biological, behavioral or managerial sciences. By selecting the discrete mathematics option starting in the junior year, a student can develop the background in mathematics needed to support graduate work in computer science. Students using this curriculum in preparing for graduate study in mathematics should be aware of the foreign language requirements for advanced degrees. In order to graduate with a major in mathematics, a student must have an overall C average or better in all mathematics courses attempted above the 100-level, for which a grade other than W has been assigned.

Students who desire more flexibility or more emphasis on the liberal arts should pursue the MH curriculum.

## Curriculum in Applied Mathematics (AMH)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH	161 An. Geom. Cal.*	5	MH	162 An. Geom. Cal.	5	MH	163 An. Geom. Cal.	5
EH	110 English Comp.	5		Core/Fine Arts **	3		Core/Philosophy **	3
HY	101 World History **	3	HY	102 World History **	3	HY	103 World History **	3
	Science##	5		Science ##	5	PS	220 General Physics I	3
				Elective	3	PS	220L Gen. Phys. Lab	1

## SOPHOMORE YEAR

MH	264 An. Geom. Cal.	5	MH	269 Elem. Diff. Eqns.	5	MH	337 Intr. Linear Alg.	5
MH	271 Intr. Math Program	3	PS	222 General Physics III	3	U	101 Soc. & Cult.	3
PS	221 General Physics II	3	PS	222L Gen. Phys. Lab III	1		Group Requisite	3
PS	221L Gen. Physics Lab II	1	EH	221 Great Books II	5		Group Requisite	5
EH	220 Great Books I	5		Group Requisite	3		Elective	3

## JUNIOR YEAR

MHC/MHT	520 Analysis I	5	MHC/MHT	521 Analysis II	5	MHC/MHT	522 Analysis III	5
MHC	567 Probability Thy.	5	MHC	568 Math. Statistics I	5		Prob. Stat. Req. +	3
MH	333 Elem. Grp. Theory	3	MH	334 Elem. Ring Theory	3	MHC	533 Ring & Fid. Theory	3
U	102 Polit Econ.	3	U	103 Indiv. in Soc.	3	EH Eng. Comp.**		5
	Group Requisite	3						

## SENIOR YEAR

MHT	563 Intr. Numer. An.	5		Numer. An. Req. ++	5-6		Appl. Math. Requisite	10
	Appl. Math. Requisite	5		Appl. Math. Requisite	5		Group Requisite	5
	Group Requisite	3		Group Requisite	3			
	Elective	4		Elective	3			

## TOTAL — 202 QUARTER HOURS

## Applied Mathematics Requisites

Students will select, in consultation with a departmental advisor, 20 hours of upper division mathematics (MH, MHC, MHT). Students electing the discrete mathematics option will select 25 hours from MH 339; MHC 512, 515, 516, 518, 571, 573, 575.

**GROUP REQUISITE.** A minimum of 25 hours of requisite credit must be taken in areas especially concerned with the application of mathematics. At least 15 hours must be taken in the same area. Primary areas for concentration are: Botany-Zoology, Chemistry, Economics, Geology, Physics, Psychology, Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering.

Students who wish a concentration in computer science are advised to select courses from the following: EE 330, 335, 430; CSE 200, 220, 230, 350, 360, 400, 405, 412, 440, 505, 512, 520, 521, 522, 523, 525, 530.

## Curriculum in Applied Discrete Mathematics (ADM)

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
MH	161 An. Geom. Cal.	5	MH	162 An. Geom. Cal.	5	MH	163 An. Geom. Cal.	5
EH	110 English Comp.	5		Core/Fine Arts **	3		Core/Philosophy **	3
HY	101 World History **	3	HY	102 World History **	3	HY	103 World History **	3
	Science ##	5		Science ##	5	CSE	200 Fund. Comp. Sc. I	4
				Elective	3			
SOPHOMORE YEAR			SOPHOMORE YEAR			SOPHOMORE YEAR		
MH	264 An. Geom. Cal.	5	MH	269 Elem. Diff. Eqns.	5	MH	337 Intr. Linear Alg.	5
CSE	220 Fnd. Comp. Sc. II	4		Group Requisite	3	CSE	360 Fnd. Alg. D&A	3
	Group Requisite	3	CSE	340 Data Structures	3		Group Requisite	5
EH	220 Great Books I	5	EH	221 Great Books II	5	U	101 Soc. & Cult.	3
							Elective	3
JUNIOR YEAR			JUNIOR YEAR			JUNIOR YEAR		
MHC/MHT	520 Analysis I	5	MHC/MHT	521 Analysis II	5	MHC	533 Ring & Fid. Theory	3
MHC	575 Graph Theory	5	MH	334 Elem. Ring Theory	3		Discrete Math Req.	5
MH	333 Elem. Gp. Theory	3		Discrete Math Req.	5	MH	Elective	5
U	102 Polit. Econ.	3	U	103 Indiv. In Soc.	3	EH	Composition **	5
SENIOR YEAR			SENIOR YEAR			SENIOR YEAR		
MH	537 Lin. Algebra	5	MH	Elective	5		Discrete Math. Req.	5
	Discrete Math. Requisite	5		Discrete Math. Requisite	5		Group Requisite	5
	Group Requisite	6		Group Requisite	3		Elective	4
				Elective	3			

## TOTAL — 202 QUARTER HOURS

\* Students not prepared for MH 161 must pass MH 160.

\*\* For University Core options to satisfy these requirements, see page 39.

# Students may substitute HY 121-122-123 for HY 101-102-103.

## CH 103-103L-104-104L or GL 103-104 or BI 101-102 or BI 101-103 or PS 220-220L-221-221L-222-222L.

Discrete Mathematics Requisite courses are to be selected from MH 339, MHC 512, 513, 515, 516, 518, 571, 573, 577.

Mathematics elective courses are to be selected from MH 371, MHC 505, 522, 530, 534, 550, 551, 567, 568, 569, MHT 522, 564.

GROUP REQUISITE. At least 25 hours of credit must be taken in courses at the 200 level or above that are offered by departments in the College of Engineering or the College of Sciences and Mathematics. At least 15 of these 25 hours must be taken in one of the following departments: Computer Science and Engineering, Electrical Engineering and Industrial Engineering.

## Microbiology

The Microbiology major is for students who wish to pursue careers in one of the various sub-disciplines of the science or for those preparing for professional degree programs in medicine or veterinary medicine. Required courses provide a strong and broad-based background. In addition, students have the opportunity through selection of elective courses to concentrate on special areas of interest, including biotechnology, microbial physiology and genetics and environmental, industrial and health-related aspects of microbiology.

## Curriculum in Microbiology (MB)

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
CH	103 Fund. Chem. *	4	CH	104 Fund. Chem.	4	CH	105 Fund. Chem.	4
CH	103L Chem. Lab	1	CH	104L Chem. Lab	1	CH	105L Chem. Lab	1
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	U	103 Indiv. In Soc.	3
EH	110 Eng. Comp.	5	MH	161 An. Geom. & Calc. #	5	MH	162 An. Geom. & Calc.	5
BI	101 Prin. Biol.	5	BI	102 Plant Biology	5	BI	103 An. Biology	5
SOPHOMORE YEAR			SOPHOMORE YEAR			SOPHOMORE YEAR		
CH	207 Org. Chem.	4	CH	208 Org. Chem.	4	MB	400 Micro. Meth.	5
CH	207L Chem. Lab	1	CH	208L Chem. Lab	1		Core/Fine Arts **	3
EH	220 Great Books I	5	EH	221 Great Books II	5	PS	207 Intr. Physics III	3
ZY	300 Genetics	5	MB	300 Microbiology	5	PS	207L Physics III Lab	1
PS	205 Intr. Physics I	3	PS	206 Intr. Physics II	3		Electives	6
PS	205L Phys. Lab	1	PS	206L Phys. Lab	1			
JUNIOR YEAR			JUNIOR YEAR			JUNIOR YEAR		
EH	400 Adv. Comp.	5	MB	543 Immunology	4		Core/History **	3
CH	518 Biochemistry	4	MB	543L Immunology Lab	2		Foreign Lang. ##	5
CH	518L Biochem. Lab	1	MB	503 Bact. Taxonomy	5		Electives	5
	Core/History **	3	MB	405 Intr. Mol. Gen. +	4	CH	519 Biochemistry	4
	Foreign Lang. ##	5		Core/History **	3	CH	519L Biochem. Lab	1

MB	540 Microb. Phys.	3
	Core/Philosophy **	5
	Group A/B Elect. ++	8

SENIOR YEAR	
Group A/B Elect. ++	15

Group A/B Elect. ++	7
Electives	2

## TOTAL — 204 QUARTER HOURS

\* The CH 111-112-113, series may be substituted for the 103-104-105 series.

\*\* For University Core options to satisfy these requirements, see page 39.

# Students not prepared to take MH 161 must pass MH 160 for no credit.

## Any foreign language accepted.

+ CH 521 may substitute.

++ Students must take 15 hours from Group A and an additional 15 hours from A or B. Group A and B Electives are as follows:

Group A: MB 446, 480, 504, 522, 541, 542, 556.

Group B: BST 215, BY 505, 514, 515, CH 209, 305, 305L, 520, EH 141, FAA 423, HF 543, 545, LT 301, MB 508, MH 163, PLP 309, PY 537, ZY 511, 519.

## Curriculum in Molecular Biology (MOB)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
EH	110 English Comp.	3	BI	101 Prin. of Biology	5	BI	102 Plant Biology	5
	Core/History	3		Core/History	3		Core/History	3
MH	161 An. Geom. & Cal. *	5	MH	162 An. Geom. & Cal.	5	MH	163 An. Geom. & Cal.	5
CH	111 Gen. Chemistry	4	CH	112 Gen. Chemistry	4	CH	113 Gen. Chemistry	4
CH	111L Gen. Chem. Lab.	1	CH	112L Gen. Chem. Lab.	1	CH	113L Gen. Chem. Lab.	1
SOPHOMORE YEAR								
CH	207 Org. Chemistry	4	CH	208 Org. Chemistry	3	CH	209 Org. Chemistry	4
CH	207L Org. Chem. Lab.	1	CH	208L Org. Chem. Lab.	2	PS	207 Intro. Physics III	3
PS	205 Intro. Physics I	3	PS	206 Intro. Physics II	3	PS	207L Intro. Physics Lab	1
PS	205L Intro. Physics Lab	1	PS	206L Intro. Physics Lab	1		Electives #	5
BI	101 Prin. of Biology	5	BI	102 Prin. of Biology	5	ZY	300 Genetics	5
	Foreign Lang.	5	MB	300 Microbiology	5			
JUNIOR YEAR								
	Electives #	5	MB	405 Intr. Mol. Gen.	4	MB	522 Recomb. DNA	3
ZY	310 Cell Biology	4	CH	519 Biochemistry	4	MB	522L Rec. DNA Lab	2
ZY	310L Cell Biol. Lab.	2	CH	519L Biochem. Lab.	1	CH	316 Physical Chem.	5
CH	518 Biochemistry	4		MOB Electives ##	5	EH	400 Adv. Comp.	5
CH	518L Biochem. Lab.	1	U	102 Polit. Econ.	3	U	103 Indiv. in Soc.	3
U	101 Soc. & Cult.	3						

## SENIOR YEAR

	MOB Elect. ##	5		MOB Elect. ##	4		MOB Elect. ##	5
	Special Prob. +	3		Special Prob. +	3		Special Prob. +	3
	Core/Philosophy **	5		Electives	6		Core/Fine Arts **	3
MB	409 Seminar ++	1	MB	409 Seminar ++	1	MB	490 Seminar ++	1

## TOTAL — 204 QUARTER HOURS

\* Students not prepared for MH 161 must pass MH 160.

\*\* For University Core options to satisfy these requirements, see page 39.

# Basic ROTC may be substituted for six hours of electives.

## MOB Electives are: BST 215, 501, BY 514, 550, CH 305, 305L, 521, EH 141, MB 540, 542, 543, 545, PS 517, PY 537, ZY 502, 519, 520. During the sophomore year, students will develop a plan of study for the junior and senior years with the assistance and approval of their advisor and dean. Substitutions may be permitted to meet specific needs of individual students.

+ Special Problems requirements for this curriculum are arranged in consultation with an advisor.

++ Seminar requirements for this curriculum are satisfied by MB 490 or through special arrangement with an advisor.

## Physics

This curriculum provides a thorough understanding of the field of physics and develops the ability to apply theoretical and experimental techniques to a wide range of problems. It provides a firm foundation for careers in physics and related fields and an excellent preparation for further study.

Graduates find opportunities in industrial and government research and development; chemical, geological, biological and mathematical physics; medical and dental research; environmental science; and teaching and/or research at the college or university level.

## Curriculum in Physics (PS)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
PS	220 Gen. Phys. I	3	PS	221 Gen. Phys. II	3	PS	222 Gen. Phys. III	3
PS	220L Gen. Phys. I Lab	1	PS	221L Gen. Phys. I Lab	1	PS	222L Gen. Phys. I Lab	1
	Core/History **	3	MH	192 Cal. for E & S	5		Scl. Elec. (BI, GL, CH) *	5
MH	191 Cal. for E & S	5		Scl. Elec. (BI, GL, CH) *	5	MH	193 Cal. for E & S	5
EH	110 Eng. Comp.	5		Core/History **	3		Core/History **	3

## College of Sciences and Mathematics

### SOPHOMORE YEAR

PS 320 Mod. PS for Engr. ....	3	Elective *** .....	3	CSE 120 Comp. Prog. ....	3
MH 294 Cal. for E & S .....	5	PS 301 Elect. & Mag. II .....	4	PS 302 Electronics .....	5
PS 300 Elect. & Mag. I .....	4	MH 269 Elem. Diff. Eq. ....	5	EH 221 Great Books II .....	5
Sci. Elec. (BI, GL, CH) * .....	5	EH 220 Great Books I .....	5	MH 362 Engr. Math .....	3

### JUNIOR YEAR

PS 501 Mechanics I .....	5	PS 502 Mechanics II .....	5	PS 515 Mod. Phys. I .....	5
PS 303 Optics .....	4	EH Adv. Comp. ** .....	5	Math. Elec.++ .....	3
MHT 506 Part. Diff. Equal. ....	3	Physics Elec.+ .....	3	Physics Elec.+ .....	3
Core/Fine Arts ** .....	3	Math Elec.++ .....	3	Core/Philosophy ** .....	5

### SENIOR YEAR

PS 516 Mod. Phys. II .....	5	U 102 Polit Econ. ....	3	U 103 Indiv. in Soc. ....	3
U 101 Soc. & Cult. ....	3	Physics Elec.+ .....	3	Phys. Elec.+ .....	3
PS 504 Stat. Thermo. ....	5	Elective *** .....	5	Math Elec.++ .....	3
Phys. Elec.+ .....	3	Math Elec.++ .....	3	507 Exp. Phys. II .....	2
.....		PS 506 Exp. Phys. I .....	2	Elective *** .....	4

### TOTAL — 195 QUARTER HOURS

\* The science elective may be met by selecting a total of 15 hours of chemistry, biology or geology. The student may choose to concentrate on one area or to take one course from each area.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Appropriate electives to meet the interests of the student may be selected in consultation with the departmental advisor.

+ The physics elective may be chosen from the following: PS 520, 521, 535, 545 and 491.

++ Math electives may be chosen from the following: MH 266 or 337, MHC 507 or 508, 503 or 504, MHT 501.

## Applied Physics

This curriculum provides a foundation in physics and emphasizes several related technical fields to provide a broader base for persons who desire to enter industrial and governmental laboratories. Individuals wishing to pursue graduate work will find that this curriculum also provides adequate preparation for advanced study.

Students anticipating graduate work should complete French, German, or Russian through the first year sequence.

### Curriculum in Applied Physics (APS)

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
PS 220 Gen. Phys. I .....	3	PS 221 Gen. Phys. II .....	3	PS 222 Gen. Phys. III .....	3
PS 220L Gen. Phys. I Lab .....	1	PS 221L Gen. Phys. I Lab .....	1	PS 222L Gen. Phys. I Lab .....	1
Core/History ** .....	3	MH 192 Cal. for E & S .....	5	Sci. Elec. (BI, GL, CH) * .....	5
MH 191 Cal. for E & S .....	5	Sci. Elec. (BI, GL, CH) * .....	5	MH 193 Cal. for E & S .....	5
EH 110 Eng. Comp. ....	5	Core/History ** .....	3	Core/History ** .....	3

#### SOPHOMORE YEAR

PS 320 Mod. PS for Engr. ....	3	Tech. Elective *** .....	3	CSE 120 Comp. Prog. ....	3
MH 294 Cal. for E & S .....	5	PS 301 Elect. & Mag. II .....	4	PS 302 Electronics (4+1) .....	5
PS 300 Elect. & Mag. I .....	4	MH 269 Elem. Diff. Eq. ....	5	EH 221 Great Books II .....	5
Sci. Elec. (BI, GL, CH) * .....	5	EH 220 Great Books I .....	5	MH 362 Engr. Math .....	3

#### JUNIOR YEAR

PS 501 Mechanics I .....	5	PS 502 Mechanics II .....	5	PS 515 Mod. Phys. I .....	5
PS 303 Optics .....	4	EH Adv. Comp. ** .....	5	Tech. Elec.*** .....	3
MHT 506 Part. Diff. Equal. ....	3	Physics Elec.+ .....	3	Physics Elec.+ .....	3
Core/Fine Arts ** .....	3	Math Elec.++ .....	3	Core/Philosophy ** .....	5

#### SENIOR YEAR

PS 516 Mod. Phys. II .....	5	U 102 Polit Econ. ....	3	U 103 Indiv. in Soc. ....	3
U 101 Soc. & Cult. ....	3	Physics Elec.+ .....	3	Tech. Elec.*** .....	10
PS 504 Stat. Thermo. ....	5	Tech. Elective *** .....	8	PS 507 Exp. Phys. II .....	2
Phys. Elec.+ .....	3	PS 506 Exp. Phys. I .....	2	.....	

### TOTAL — 195 QUARTER HOURS

\* The science elective may be met by selecting a total of 15 hours of chemistry, biology or geology. The student may choose to concentrate on one area or to take one course from each area.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Appropriate electives to meet the interests of the student may be selected in consultation with the departmental advisor. Up to 12 hours may be used for ROTC.

+ The physics elective may be chosen from the following: PS 520, 521, 535, 545 and 491.

++ Math electives may be chosen from the following: MH 266 or 337, MHC 507 or 508, 503 or 504, MHT 501.

## Zoological Sciences

These curricula are designed to prepare students for graduate study and a wide variety of careers in animal biology. The student has the choice of five degree programs including two pre-veterinary medicine options: Zoology, Zoology/Pre-vet, Wildlife Science, Wildlife Science/Pre-vet, and Marine Biology.

## Curriculum in Zoology (ZY)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI	101 Prin. of Biology .....	5	CH	103 Fund. Chem. I .....	4
EH	110 Eng. Comp. ....	5	CH	103L Gen. Chem. Lab .....	1
MH	161 An. Geom. & Cal. ## .....	5	MH	162 An. Geom. & Cal. ....	5
U	101 Soc. & Cult. ....	3	BI	102 Plant Biology .....	5
	ROTC or Elective .....	1	U	102 Polit. Econ. ....	3
				ROTC or Elective .....	1

## SOPHOMORE YEAR

CH	207 Org. Chemistry .....	4	CH	208 Org. Chemistry .....	3
CH	207L Org. Chem. Lab. ....	1	CH	208L Org. Chem. Lab. ....	2
ZY	300 Genetics .....	5	PS	205 Intr. Physics I .....	3
ZY	303 Evolution & Syst. ....	5	PS	205L Intr. Phys. Lab. I .....	1
HY	102 World History .....	3	EH	220 Great Books I .....	5
	ROTC or Elective .....	1	HY	103 World History .....	3
				ROTC or Elective .....	1

## JUNIOR YEAR

PS	207 Intr. Physics III .....	3	ZY	401 Invert. Zoology .....	5
PS	207L Intr. Physics Lab. III .....	1		Computer Sci. ....	3
GL	111 Hist. Geology .....	5	BST	501 Biostats. ....	5
ZY	310 Cell Biology .....	4	ZY	301 Comp. Anat. ....	5
ZY	310L Cell Biol. Lab .....	2			

## SENIOR YEAR

	Foreign Lang. ....	5		Foreign Lang. ....	5
ZY	402 Nat. Hist. Vert. ....	5	ZY	524 Animal Physiol. ....	5
	Botany Elective .....	5		Core/Philosophy ** .....	5

## TOTAL — 204 QUARTER HOURS

+ Chemistry may also be started with CH 101. See advisor for details.

++ Students not prepared for MH 161 must pass MH 160. See advisor for details.

\*\*For University Core options to satisfy these requirements, see page 39.

NOTE: Six hours of advanced ROTC may be substituted for the third quarter of the foreign language plus the one hour of elective in the third quarter of the senior year.

## Curriculum in Wildlife Science (WL)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI	101 Prin. Biology .....	5	BI	102 Plant Biology .....	5
CH	103 Fund. Chem. I + .....	4	CH	104 Fund. Chem. II .....	4
CH	103L Gen. Chem. Lab. ....	1	CH	104L Gen. Chem. Lab. ....	1
MH	161 An. Geom. & Cal. ++ .....	5	CSE	100 Intro. PC Appl. ....	3
	Core/History .....	3		Core/History .....	3
	ROTC or Elective .....	1		ROTC or Elective .....	1

## SOPHOMORE YEAR

CH	203 Org. Chemistry .....	5	ZY	300 Genetics .....	5
BST	215 Intro. Biol. Stat. ....	5	ZY	303 Evol. & Syst. ....	5
ZY	205 Wildlife Cons. ....	3	EH	220 Great Books I .....	5
PS	200 Fund. Physics .....	5		ROTC or Elective .....	1
	ROTC or Elective .....	1			

## JUNIOR YEAR

ZY	328 Prin. Wildl. Mgt. ....	4	ZY	524 An. Physiol. ....	5
ZY	328L Wildl. Mgt. Lab. ....	1	U	102 Polit. Econ. ....	3
BY	506 Syst. Botany .....	5	ENT	304 Gen. Entomology .....	5
AY	304/7 Gen. Soils .....	5		Core/Fine Arts ** .....	3
U	101 Soc. & Cult. ....	3			

## SENIOR YEAR

FY	523 Silviculture .....	4	ZY	401 Inv. Zoology .....	5
ZY	527 Wildl. P&P .....	3	ZY	528 Wildl. Biology .....	4
ZY	578 Mammalogy .....	5	ZY	528L Wildl. Bio. Lab .....	2
EHA	304 Tech. Writing .....	5	BST	501 Biol. Stats. ....	5

## TOTAL — 204 QUARTER HOURS

+ Chemistry may also be started with CH 101. See advisor for details.

++ Students not prepared for MH 161 must pass MH 160. See advisor for details.

\*\*For University Core options to satisfy these requirements, see page 39.

Students are required to graduate with the minimum educational requirements necessary to be eligible for certification by the Wildlife Society as an Associate Wildlife Biologist. Deviation from this model may jeopardize this eligibility. Consult your advisor before scheduling alternative courses.



## Curriculum in Marine Biology (MRB)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI	101 Prin. of Biology ..... 5	CH	103 Fund. Chem. I + ..... 4	BI	103 Animal Biology ..... 5
EH	110 Eng. Comp. .... 5	CH	103L Gen. Chem. Lab ..... 1	CH	104 Fund. Chem. II ..... 4
MH	161 An. Geom. & Cal. ++ ..... 5	MH	162 An. Geom. & Cal. .... 5	CH	104L Gen. Chem. Lab ..... 1
U	101 Soc. & Cult. .... 3	BI	102 Plant Biology ..... 5	U	103 Indiv. in Soc. .... 3
	ROTC or Elective ..... 1	U	102 Polit. Econ. .... 3	HY	101 World History ..... 3
			ROTC or Elective ..... 1		ROTC or Elective ..... 1

## SOPHOMORE YEAR

CH	207 Organic Chem. .... 4	CH	208 Organic Chem. .... 3	GL	110 Phys. Geology ..... 5
CH	207L Org. Chem. Lab ..... 1	CH	208L Org. Chem. Lab ..... 2		Foreign Lang. .... 5
ZY	300 Genetics ..... 5	PS	205 Intr. Phys. I ..... 3	PS	206 Intr. Phys. II ..... 3
EH	220 Great Books I ..... 5	PS	205L Intr. Phys. Lab I ..... 1	PS206L	Intr. Phys. Lab. II ..... 1
HY	102 World History ..... 3	EH	221 Great Books II ..... 5	HY103	World History ..... 3
	ROTC or Elective ..... 1	ZY	435 Gen. Ocean. .... 3		ROTC or Elective ..... 1
			ROTC or Elective ..... 1		

## JUNIOR YEAR

PS	207 Intr. Phys. III ..... 3	EH	400 Adv. Comp. .... 5	BST	501 Biol. Stats. .... 5
PS	207L Intr. Phys. Lab III ..... 1	ZY	436 Marine Biol. .... 3	BY	513 Plant Ecology ..... 5
ZY	310 Cell Biology ..... 4	ZY	303 Evol. & Syst. .... 5		Core/Fine Arts ** ..... 3
	Foreign Lang. .... 5		Foreign Lang. .... 5	ZY	306 Prin. of Ecol. .... 5
ZY	402 Nat. Hist. of Vert. .... 5				

## SENIOR YEAR

	Core/Philosophy ** ..... 5	ZY	401 Inv. Zoology ..... 5	ZY	538, 574, 575 or 576 ..... 5
MB	300 Gen. Microbiol. .... 5	ZY	536 Mar. Com. Ecol. .... 3	GL	111 Hist. Geology ..... 5
	Elective ..... 3	ZY	524 An. Physiology ..... 5		Elective ..... 3

## TOTAL — 218 QUARTER HOURS

+ Chemistry may also be started with CH 101. See advisor for details.

++ Students not prepared for MH 161 must pass MH 160. See advisor for details.

\*\*For University Core options to satisfy these requirements, see page 39.

NOTE: Students must spend a quarter during either the junior or senior year at an approved marine biology laboratory and successfully complete 15 quarter hours of coursework there.

## Pre-Professional Curricula

Pre-professional programs are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-dental hygiene, pre-occupational therapy, pre-pharmacy and pre-veterinary medicine. Advisors are available in each curriculum to guide the students concerning admissions requirements to the professional schools. The department in which students major will advise them where applicable. Completion of these curricula does not assure admission to a professional school. Competition for admission to professional schools is keen; the number of qualified applicants exceeds the number of places available.

## Pre-Dentistry and Pre-Medicine

This curriculum leads to a Bachelor of Science degree and is designed to prepare students for medical and dental schools. The requirements are very exacting and demand high scholastic competence and performance. As a minimum, students must strive for a B-plus four-year college record to attain good promise of being selected by a professional school.

The bachelor's degree is required by most dental and medical schools for admission; however, should outstanding students gain admission to a dental or medical school prior to graduation, they may receive a combination B.S. degree by completing successfully the first nine quarters of this curriculum, a total of 157 quarter hours, and the freshman year of professional school.

Students in pre-dentistry or pre-medicine should take the national Dental Aptitude Test or the Medical College Admission Test at least a year in advance of the date of entry to professional school, and follow with applications to the professional schools of their choice. Early in the junior year, the student should seek information from the Premedical-Pre-dental Advisory Committee concerning procedures to follow to obtain the necessary committee evaluation and recommendation to professional school. Forms and instructions are available in the office of the Dean of Sciences and Mathematics.

Most American medical schools recommend that medical and dental school applicants have (1) an academic year each of freshman biology, general chemistry, organic chemistry, and physics; (2) breadth in the educational experience; and (3) indepth experience in a single discipline. Auburn University students accomplish the above by enrolling in a core of 151 hours as outlined in the following curriculum model. Each student then elects an area of concentration from the College of Sciences and Mathematics (see list below) or a major from the General

Curriculum majors in the College of Liberal Arts (see section on the College of Liberal Arts). Depending upon this choice, individuals will have up to 29 hours of electives.

### Curriculum In Pre-Dentistry (PD), Pre-Medicine (PM)

#### FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH	111 Gen. Chemistry *.....4	CH	112 Gen. Chemistry.....4	CH	113 Gen. Chemistry.....4
CH	111L Gen. Chem. Lab.....1	CH	112L Gen. Chem. Lab.....1	CH	113L Gen. Chem. Lab.....1
MH	161 An. Geom. & Cal. #.....5	MH	162 An. Geom. & Cal. #.....5	MH	163 An. Geom. & Cal. #.....5
	Foreign Lang. ##.....5	EH	110 English Comp. ....5	HY	101 World History.....3
COM	100 Prof. Comm. ....3		Core/Fine Arts **.....3	BI	101 Prin. Biol. ....5
U	199 Orientation.....1		Elective.....1		

#### SOPHOMORE YEAR

CH	207 Org. Chem. ....4	CH	208 Org. Chem. ....3	CH	209 Org. Chem. ....4
CH	207L Chem. Lab.....1	CH	208L Chem. Lab.....2	ZY	300 Genetics.....5
PS	205 Physics I ++.....3	PS	206 Physics II.....3	PS	207 Physics III.....3
PS	205L Phys. Lab.....1	PS	206L Phys. Lab.....1	PS	207L Phys. Lab.....1
HY	102 World History.....3	HY	103 World History.....3	EH	221 Great Books II.....5
BI	103 Animal Biology.....5	EH	220 Great Books I.....5		

#### JUNIOR YEAR

ZY	302 Vert. Embryology.....5	ZY	310 Cell Biology.....4		Computer Sci. ....3
EH	400 Adv. Comp. ....5	ZY	310L Biol. Lab.....2		Major/Concen. ....10
U	101 Soc. & Cult. ....3	U	102 Polit Econ. ....3	U	103 Indiv. in Soc. ....3
	Major/Conc./Elect. ....3	PA	218 Ethics & Hlth. Sci. ....5		
			Major/Concen. ....5		

#### SENIOR YEAR

Major/Concen. ....10	Major/Concen. ....5	Major/Concen./Elect. ....15
Major/Concen./Elect. ....5	Major/Concen./Elect. ....10	

#### TOTAL — 204 QUARTER HOURS

\* Chemistry may also be started with CH 101; see advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

## Students not prepared for MH 161 must pass MH 160.

### Students are encouraged to enroll in a foreign language to capitalize on a strong high school experience. Any foreign language is acceptable. Basic ROTC may be substituted for foreign language.

+ Students may substitute a course in statistics (BST 215, 501 or PG 315) for MH 163.

++ Students planning a physics concentration should take PS 220-221-222 instead of PS 205-206-207.

#### SCIENCES AND MATHEMATICS CONCENTRATION AREAS

Biomedical Sciences: CH 316, 518, 519, MB 300, 543, ZY 560, 561 and 301 or 509, one year of foreign language and three credits of special problems.

Botany: BI 102, BY 306, and 20 additional hours from BY 505, 506, 513, 514, 535, 536 and 554.

Chemistry: Select 30 hours from CH 205, 205L, 316\*, 490, 507\*, 508, 509, 510, 513, 518, 519, 520 and MH 264\*\*.

Geology: GL 110, 111, 206, 240, 301 and five additional GL hours at the 200-level or above.

Mathematics: MH 264, 269, 337, 331, MHC/MHT 520, and one course from MH 332, MHC/MHT 521, both MHC 550-551, MHT 563 or MHT 564.

Microbiology: MB 300 or 302, 446, 542 and an additional 15 hours from 400-500 level MB courses.

Physics: Select 30 hours from MH 264, 266, 269, 501, PS 300, 301, 302, 303, 305\*\*\*, 306, 320\*\*\*\*.

Zoology: Select 15 hours from ZY 303, 306, 401, 402 and an additional 15 hours from ZY 301, 509, 511, 524\*\*\*\*, 560\*\*\*\* or 561.

\* Credit cannot be earned for both CH 316 and 507.

\*\* MH 264 will count toward the 30 hours only if it is a prerequisite for a chemistry course that is taken.

\*\*\* Credit cannot be earned for both PS 305 and 320.

\*\*\*\* Credit cannot be earned for both ZY 524 and 560.

#### COLLEGE OF LIBERAL ARTS MAJORS

Refer to the College of Liberal Arts section in this Bulletin for a listing of the majors.

### Pre-Optometry

This curriculum leads to a Bachelor of Science degree and is designed to prepare students for the rigorous demands of American optometry schools. The requirements are exacting and demand high scholastic competence and performance. As a minimum, students must strive for a B-plus four-year college record to attain good promise of being selected by a professional school.

Each student must either select an area of concentration (see lists below the pre-medicine curriculum model) from the College of Sciences and Mathematics or a major from the General Curriculum majors listed in the College of Liberal Arts.

Students with outstanding records who are able to gain admission to an accredited school of optometry before graduation may qualify for the B.S. degree by one of the following methods: (1) completing successfully the first nine quarters of this curriculum, a total of 156 quarter hours, plus

the freshman year of professional optometry school; or (2) completing successfully the first two years of this curriculum, a total of 106 quarter hours, plus three years of professional optometry school.

Pre-Optometry students should write for an official bulletin from each of the professional schools of their choice during the freshman year and discuss with the Pre-Optometry advisor any special requirements of those particular schools. The requirements of all the U.S. schools of optometry are covered in the suggested program below, either as required subjects or as electives. The student should take the Optometry College Admission Test and make official application for admission to the professional schools about a year in advance of the expected date of matriculation.

### Curriculum In Pre-Optometry (OP)

#### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	111 Gen. Chemistry *	4	CH	112 Gen. Chemistry	4	CH	113 Gen. Chemistry	4
CH	111L Gen. Chem. Lab	1	CH	112L Gen. Chem. Lab	1	CH	113L Gen. Chem. Lab	1
MH	161 An. Geom. & Cal. #	5	MH	162 An. Geom. & Cal.	5	PG	212 Psychology	5
EH	110 Eng. Comp.	5	COM	100 Prof. Comm.	3	HY	101 World History	3
U	199 Orientation	1		Core/Fine Arts **	3	BI	101 Prin. Biol.	5
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

#### SOPHOMORE YEAR

CH	207 Org. Chem.	4	CH	208 Org. Chem.	3	PG	315 Quant. Meth.	5
CH	207L Chem. Lab	1	CH	208L Chem. Lab	2	ZY	300 Genetics	5
PS	205 Physics I ##	3	PS	206 Physics II	3	PS	207 Physics III	3
PS	205L Phys. Lab	1	PS	206L Phys. Lab	1	PS	207L Phys. Lab	1
HY	102 World History	3	HY	103 World History	3	EH	221 Great Books II	5
BI	103 Animal Biology	5	EH	220 Great Books I	5		ROTC or Elective	1
	ROTC or Elective	1		ROTC or Elective	1			

#### JUNIOR YEAR

ZY	302 Vert. Embryology	5	ZY	310 Cell Biology	4	MB	300 Microbiology	5
EH	400 Adv. Comp.	5	ZY	310L Biol. Lab	2		Major/Concen.	5
U	101 Soc. & Cult.	3	U	102 Polit Econ.	3	U	103 Indiv. in Soc.	3
	Computer Science	3	PA	218 Ethics & Hith. Sci.	5		Elective	3
				Major/Concen.###	5			

#### SENIOR YEAR

	Major/Concen.	10		Major/Concen.	10		Major/Concen./Elect.	15
	Major/Concen./Elect.	5		Major/Concen./Elect.	4			

#### TOTAL — 204 QUARTER HOURS

\* Chemistry may also be started with CH 101; see advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

## Students not prepared to take MH 161 must pass MH 160 for no credit.

### Students planning a physics concentration should take PS 220-221-222 instead of PS 205-206-207.

#### At the end of the sophomore year, the student must declare a concentration in the College of Sciences and Mathematics, or a major in the College of Liberal Arts (see list in the pre-medicine curriculum model).

### Pre-Physical Therapy

At the present time, many schools, including the University of Alabama, require a baccalaureate degree for entry into physical therapy at the master's or certificate level. Students applying to schools of physical therapy at the master's level or certificate level should complete the following curriculum model leading to a bachelor's degree or choose a major in another curriculum and fulfill only the minimum requirements for physical therapy programs. Students should write for an official bulletin from each of the professional schools of their choice during their freshman year and discuss with the pre-physical therapy advisor any special requirements of those particular schools.

Students applying to a two-year B.S. program in physical therapy should plan their schedules with the advisor to satisfy the requirements of their chosen school.

### Curriculum In Pre-Physical Therapy (PT)

#### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	111 Gen. Chemistry *	4	CH	112 Gen. Chemistry	4	CH	113 Gen. Chemistry	4
CH	111L Gen. Chem. Lab	1	CH	112L Gen. Chem. Lab	1	CH	113L Gen. Chem. Lab	1
MH	161 An. Geom. & Cal. #	5	MH	162 An. Geom. & Cal.	5	PG	212 Psychology	5
EH	110 Eng. Comp.	5	COM	100 Prof. Comm.	3	HY	101 World History	3
U	199 Orientation	1		Core/Fine Arts **	3	BI	101 Prin. Biol.	5
	ROTC or Elective	1		ROTC or Elective	1		ROTC or Elective	1

## SOPHOMORE YEAR

CH 207 Org. Chem. ....	4	CH 208 Org. Chem. ....	3	PG 315 Quant. Meth. ....	5
CH 207L Chem. Lab. ....	1	CH 208L Chem. Lab. ....	2	ZY 300 Genetics ....	5
PS 205 Physics I ** ....	3	PS 206 Physics II ....	3	PS 207 Physics III ....	3
PS 205L Phys. Lab. ....	1	PS 206L Phys. Lab. ....	1	PS 207L Phys. Lab. ....	1
HY 102 World History ....	3	HY 103 World History ....	3	EH 221 Great Books II ....	5
BI 103 Animal Biology ....	5	EH 220 Great Books I ....	5	ROTC or Elective ....	1
ROTC or Elective ....		ROTC or Elective ....	1		

## JUNIOR YEAR

ZY 250 Hum. Anatomy ....	5	ZY 251 Hum. Physiology ....	5	MB 300 Microbiology ....	5
EH 400 Adv. Comp. ....	5	Major/Concen.*** ....	5	PG 435 Abnormal Psych. ....	5
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
Computer Science ....	3	PA 218 Ethics & Hlth. Sci. ....	5	Elective ....	3

## SENIOR YEAR

Major/Concen. ....	10	Major/Concen. ....	10	Major/Concen./Elect. ....	10
Major/Concen./Elect. ....	5	Major/Concen./Elect. ....	5	Major/Concen. ....	5

## TOTAL — 204 QUARTER HOURS

\* Chemistry may also be started with CH 101; see advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Students not prepared to take MH 161 must pass MH 160 for no credit.

\*\*\* Students planning a physics concentration should take PS 220-221-222 instead of PS 205-206-207.

\*\*\* At the end of the sophomore year, the student must declare a concentration in the College of Sciences and Mathematics, or a major in the College of Liberal Arts (see list in the pre-medicine curriculum model).

## Pre-Dental Hygiene, Pre-Occupational Therapy

These curricula are designed to prepare students for admission to professional schools. The student should strive for a good college record to attain reasonable promise of being selected. Students should write for official bulletins from the professional schools of their choice early in their freshman year and discuss with their advisor any special requirements of those particular schools. Official application for admission to the professional schools needs to be made about a year in advance of the expected date of matriculation.

## Curriculum in Pre-Dental Hygiene (DH)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 103 Fund. Chem. *	4	CH 103 Fund. Chem. ....	4	CH 105 Fund. Chem. ....	4
CH 103L Chem. Lab. ....	1	CH 104L Chem. Lab. ....	1	CH 105L Chem. Lab. ....	1
MH 160 Pre-Calc. ....	5	BI 101 Prin. Biol. ....	5	ZY 250 Hum. Anat. ....	5
HY 101 World History ....	3	HY 102 World History ....	3	HY 103 World History ....	3
U 199 Orientation ....	1	EH 110 Eng. Comp. ....	5	Core/Fine Arts **	3
ROTC or Elective ....	2	ROTC or Elective ....	1	ROTC or Elective ....	1

## SOPHOMORE YEAR

U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	PA 218 Ethics & Hlth. Sci. ....	5
ZY 251 Hum. Phys. ....	5	PG 212 Psychology ....	5	MB 300 Microbiol. ....	5
CH 203 Org. Chem. ....	5	ROTC or Elective ....	1	COM 100 Prof. Comm. ....	3
ROTC or Elective ....	1			ROTC or Elective ....	1

## TOTAL — 102 QUARTER HOURS

\* Chemistry may also be started with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

## Curriculum in Pre-Occupational Therapy (OT)

## FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biology ....	5	ZY 250 Human Anatomy ....	5	ZY 251 Physiology ....	5
MH 160 Pre-Calc. ....	5	CH 103 Gen. Chem. *	4	CH 104 Gen. Chem. ....	4
EH 110 Eng. Comp. ....	5	CH 103L Chem. Lab. ....	1	CH 104L Chem. Lab. ....	1
U 199 Orientation ....	1	Core/Fine Arts **	3	PG 212 Psychology ....	5
ROTC or Elective ....	1	COM 100 Prof. Comm. ....	3	ROTC or Elective ....	1
		ROTC or Elective ....	1		

## SOPHOMORE YEAR

HY 101 World History ....	3	HY 102 World History ....	3	HY 103 World History ....	3
U 101 Soc. & Cult. ....	3	U 102 Polit. Econ. ....	3	U 103 Indiv. in Soc. ....	3
AT 112 or 121 ....	5	SY 220 Statistics ....	5	PG 435 Psychology ....	5
EH 220 Great Books I ....	5	EH 221 Great Books II ....	5	PA 218 Ethics & Hlth. Sci. ....	5
ROTC or Elective ....	1	ROTC or Elective ....	1	ROTC or Elective ....	1

## TOTAL — 102 QUARTER HOURS

\* Chemistry may also be started with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

## Pre-Pharmacy

This curriculum meets the requirements for admission to the Auburn University School of Pharmacy, which is fully accredited by the American Council on Pharmaceutical Education. Complete information about the professional curriculum in pharmacy may be found in the School of Pharmacy section.

To be considered for admission, the applicant must complete the basic two-year requirements below and must have a 2.5 (C) grade-point average based on all courses attempted as well as a 2.5 (C) science index (grade-point average on the biological and physical science courses and mathematics). A grade of D on any required course will not be accepted. A student who does not qualify for admission to the School of Pharmacy after the completion of eight quarters in pre-pharmacy at Auburn University, but who meets University continuation in residence requirements may continue to register in pre-pharmacy only by special permission of the Dean of Sciences and Mathematics.

### Curriculum In Pre-Pharmacy (PPY)

#### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	111 Gen. Chem. *	4	CH	112 Gen. Chem.	4	CH	113 Gen. Chem.	4
CH	111L Chem. Lab	1	CH	112L Chem. Lab	1	CH	113L Chem. Lab	1
MH	161 Calculus #	5		Core/Fine Arts **	3	HY	103 World History	3
HY	101 World History	3	EH	110 Eng. Comp.	5	BI	101 Prin. Biol.	5
	ROTC or Elective	4	HY	102 World History	3	PA	218 Ethics	5
				ROTC or Elective	1		ROTC or Elective	1

#### SOPHOMORE YEAR

CH	207 Org. Chem.	4	CH	208 Org. Chem.	3	PS	207 Physics III	3
CH	207L Chem. Lab	1	CH	208L Chem. Lab	2	PS	207L Phys. Lab	1
PS	205 Physics I	3	PS	206 Physics II	3	ZY	250 Hum. Anatomy	5
PS	205L Phys. Lab	1	PS	206L Phys. Lab	1	U	103 Indiv. in Soc.	3
U	101 Soc. & Cult.	3	U	102 Polit. Econ.	3	MB	302 Microbiology	5
EH	220 Great Books I	5	EH	221 Great Books II	5			

TOTAL — 104 QUARTER HOURS

\* Chemistry may be begun with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

# Students not prepared to take MH 161 must pass MH 160 for no credit.

## The sequences HY 121-122-123 or U 270-271-272 are also acceptable.

## Pre-Veterinary Medicine

Students in the Pre-Veterinary Medicine (PV) curriculum must select a major by the end of their sixth quarter. Students in Sciences and Mathematics may select microbiology (VMB), wildlife (VWL) or zoology (VZY) as majors. Pre-Veterinary options in the College of Agriculture include animal and dairy science (ADPV) and poultry science (PHPV). The minimum requirements for admission to the College of Veterinary Medicine at Auburn University (111 hours) are incorporated into the curriculum models for all these majors. Those special requirements are:

EH Comp. **	10	World History **	9	Literature **	10
Mathematics **	5	Philosophy **	5	Social Science **	9
Fine Arts **	3	Writing Reinforcement *	0	BI 101, 103	10
CH 103, 104, 105	15	CH 207, 208	10	PS 205, 206, 207	12
ADS 321	5	Scientific Electives	8		

\* WR courses available in Junior year and in College of Veterinary Medicine for students who enter the DVM program prior to receiving the BS degree.

\*\* For University Core options to satisfy these requirements, see page 39.

It is possible to gain admission to the College of Veterinary Medicine by completing only the minimum requirements listed above. However, it is preferable to select a major and earn a baccalaureate degree. If a student is admitted to the College of Veterinary Medicine prior to completion of the full four years, he/she may obtain a B.S. degree by successfully completing the first nine quarters of any one of the four Pre-Veterinary curricula and the first year of veterinary school.

Application for admission to the College of Veterinary Medicine must be submitted to the Dean of that College between September 15 and October 15 preceding the admission date. A minimum GPA of 2.5 is required for application; D grades in required courses are unacceptable. All minimum requirements, including courses repeated due to time limitations, must be completed by the end of the spring quarter preceding the date of admission, and all advanced required courses in physical and biological sciences (organic chemistry, physics, microbiology and genetics) must have been completed within six calendar years prior to the anticipated entrance date. Competition for admission to the professional schools is keen with the number of qualified



applicants exceeding the number of places available. For additional information, see College of Veterinary Medicine section, as well as the Pre-Veterinary Medicine curricula in the College of Agriculture. Pre-Veterinary options also exist in the College of Agriculture.

### Curriculum in Pre-Veterinary Medicine (PV)

#### FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	103 Fund. Chem. *	4	CH	104 Fund. Chem. ....	4	CH	105 Fund. Chem. ....	4
CH	103L Chem. Lab .....	1	CH	104L Chem. Lab .....	1	CH	105L Chem. Lab .....	1
U	101 Soc. & Cult. ....	3	U	102 Polit Econ. ....	3	U	103 Indiv. in Soc. ....	3
MH	160 Pre-Calc. w/Trig. ***	5	BI	101 Prin. Biol. ....	5	BI	103 Animal Biology .....	5
EH	110 Eng. Comp. ....	5		Core/Fine Arts **	3	ZY	300 Genetics .....	5
	ROTC or Elective .....	1		ROTC or Elective .....	1		ROTC or Elective .....	1

#### SOPHOMORE YEAR

CH	207 Org. Chem. ....	4	CH	208 Org. Chem. ....	4		Core/Philosophy **	5
CH	207L Chem. Lab .....	1	CH	208L Chem. Lab .....	2		Tech. Elective ***	5
PS	205 Intr. Phys. I .....	3	PS	206 Intr. Phys. II .....	3	PS	207 Intr. Phys. III .....	3
PS	205L Phys. Lab .....	1	PS	206L Phys. Lab .....	1	PS	207L Phys. Lab .....	1
EH	220 Great Books I .....	5	EH	221 Great Books II .....	5		Core/History **	3
	Core/History ** .....	3		Core/History ** .....	3		ROTC or Elective .....	1
	ROTC or Elective .....	1		ROTC or Elective .....	1			

#### JUNIOR YEAR

	Tech. Elective ****	5		Tech. Elective ****	5		Major .....	5
ADS	321 An. Bio. & Nutr. ....	5	EH	400 Adv. Comp. ....	5		Major .....	5
MB	300 Microbiology .....	5		Major .....	5		Major/Elect. ....	5
	Major/Elect. ....	5		Major .....	5		Major/Elect. ....	3

#### TOTAL — 164 QUARTER HOURS

\* Chemistry may also be started with CH 101 or CH 111. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Many students are prepared to begin calculus. All students are urged to take additional calculus courses if they plan to select a major in the College of Sciences and Mathematics.

\*\*\*\* See advisor for appropriate electives.

Students in the Pre-Veterinary Medicine (PV) curriculum must select a major by the sixth quarter. Students in Sciences and Mathematics may select chemistry (VCH), wildlife (VWL) or zoology (VZY) as majors. The minimum requirements for admission to the College of Veterinary Medicine at Auburn University (125 hours) are incorporated into the curriculum models for all four of these majors. Those special requirements are:

EH Comp. ....	5	BI 101-103 .....	10	ADS 200 .....	5
EH 141 .....	3	CH 103-104-105 .....	15	ADS 220 .....	5
HY 101-102-103 .....	9	CH 207-208 .....	10	ADS 320 .....	4
Literature .....	10	PS 205-206-207 .....	12	MB 300 .....	3
MH 160 .....	5	Logic/Ethics .....	5	Social Science .....	9
ZY 300 .....	5	Fine Arts .....	3	Adv. Eng. Comp. ....	5

It is possible to gain admission to the College of Veterinary Medicine by completing only the minimum requirements listed above. However, it is preferable to select a major and earn a baccalaureate degree. If a student is admitted to veterinary school prior to completion of the full four years, he/she may obtain a B.S. degree by successfully completing the first nine quarters of any one of the four pre-veterinary curricula (VCH, VMB, VWL, VZY) and the first year of veterinary school.

Application for admission to the College of Veterinary Medicine must be submitted to the dean of that college between September 15 and October 15 preceding the admission date. A minimum GPA of 2.5 is required for application; D grades in required courses are unacceptable. All minimum requirements, including courses repeated due to time limitations, must be finished by the end of the spring quarter preceding the date of admission, and all advanced required courses in physical and biological sciences (organic chemistry, physics, microbiology and genetics) must have been completed within six calendar years prior to the anticipated entrance date. Completion for admission to professional schools is keen with the number of qualified applicants exceeding the number of places available. For additional information, see section on College of Veterinary Medicine.

## Curriculum In Microbiology Pre-Veterinary Medicine Option (VMB)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	103 Fund. Chem. *	4	CH	104 Fund. Chem. ....	4	CH	105 Fund. Chem. ....	4
CH	103L Chem. Lab .....	1	CH	104L Chem. Lab .....	1	CH	105L Chem. Lab .....	1
U	101 Soc. & Cult. ....	3	U	102 Polit. Econ. ....	3	U	103 Indiv. in Soc. ....	3
BI	101 Prin. Biol. ....	5	BI	103 Animal Biology ....	5	BI	102 Plant Biol. ....	5
EH	110 Eng. Comp. ....	3	MH	161 An. Geom. & Calc. #	5		Tech. Elective .....	5

## SOPHOMORE YEAR

CH	207 Org. Chem. ....	4	CH	208 Org. Chem. ....	4	ZY	300 Genetics .....	5
CH	207L Chem. Lab .....	1	CH	208L Chem. Lab .....	2		Core/Fine Arts **	3
EH	220 Great Books I .....	5	EH	221 Great Books II .....	5	PS	207 Intr. Phys. III .....	3
ADS	220 An. Bio. & Nutr. ....	5	MB	300 Microbiology .....	5	PS	207L Phys. Lab .....	1
PS	205 Intr. Phys. I .....	3	PS	206 Intr. Phys. II .....	3		Core/Philosophy **	5
PS	205L Phys. Lab .....	1	PS	206L Phys. Lab .....	1			

## JUNIOR YEAR

MB	446 Clin./Path. Micro. ....	5	EH	400 Adv. Comp. ....	5		Core/History **	3
MB	540 Micro. Phys. ....	3	MB	543 Immunology .....	4		Elective .....	10
CH	518 Biochemistry .....	4	MB	543L Immunology Lab .....	2	CH	519 Biochemistry .....	4
CH	518L Biochem. Lab .....	1		Core/History **	3	CH	519L Biochem. Lab .....	1
	Core/History **	3	MB	405 Intr. Mol. Genetics ++	4			

## SENIOR YEAR

	Foreign Lang. ##	5		Foreign Lang. ##	5		Group A/B Elective .....	5
	Group A/B Electives +	10		Group A/B Electives	12		Elective .....	6

## TOTAL — 204 QUARTER HOURS

\* CH 111-112-113 series may substitute for 103-104-105.

\*\* For University Core options to satisfy these requirements, see page 39.

\* Students not prepared to take MH 161 must pass MH 160 for no credit.

## Any foreign language accepted.

+ Students must take 15 hours from Group A and an additional 11 hours from A and/or B.

Group A: MB 446, 460, 504, 522, 541, 542, 556.

Group B: BST 215, BY 505, 514, 515, CH 209, 305, 305L, 520, EH 141, FAA 423, HF 543, 545, LT 301, MB 508, MH 163, PLP 309, PY 537, ZY 511, 519.

++ CH 521 may substitute.

## Curriculum In Wildlife Science Pre-Veterinary Medicine Option (VWL)

## FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
CH	103 Fund. Chem. I *	4	EH	110 Eng. Comp. ....	5	CH	105 Fund. Chem. III .....	4
CH	103L Gen. Chem. Lab .....	1	CH	104 Fund. Chem. II .....	4	CH	105L Gen. Chem. Lab .....	1
U	101 Soc. & Cult. ....	3	CH	104L Gen. Chem. Lab .....	1	U	103 Indiv. in Soc. ....	3
MH	161 An. Geom. & Cal. ***	5	U	102 Polit. Econ. ....	3	BI	103 Animal Biology .....	5
BI	101 Prin. of Biology .....	5	BI	102 Plant Biology .....	5		Tech. Elective + .....	5
	ROTC or Elective .....	1		ROTC or Elective .....	1		ROTC or Elective .....	1

## SOPHOMORE YEAR

CH	207 Organic Chem. ....	4	CH	208 Organic Chem. ....	3	ZY	300 Genetics .....	5
CH	207L Org. Chem. Lab .....	1	CH	208L Org. Chem. Lab .....	2	PS	207 Intr. Phys. III .....	3
PS	205 Intr. Phys. I .....	3	PS	206 Intro. Physics II .....	3	PS	207L Physics Lab .....	1
PS	205L Phys. Lab .....	1	PS	206L Physics Lab .....	1		Tech. Elective + .....	3
EH	220 Great Books I .....	5		Core/Fine Arts **	3		Core/Philosophy **	5
ZY	205 Wildl. Cons. ....	3	EH	221 Great Books II .....	5		ROTC or Elective .....	1
	ROTC or Elective .....	1		ROTC or Elective .....	1			

## JUNIOR YEAR

ZY	306 Prin. of Ecol. ....	5	EH	400 Adv. Comp. ....	5	MB	300 Microbiology .....	5
ZY	328 Prin. of Wildl. ....	1	ADS	521 An. Biochem. ....	5		Tech. Elective + .....	4
ZY	328L Wildl. Mgmt. Lab .....	4	ZY	528 Wildl. Biol. ....	5	HY	103 World History .....	3
ZY	402 Nat. Hist. Vert. ....	5	ZY	528L Wildl. Biol. Lab .....	2			
HY	101 World History .....	3	HY	102 World History .....	3			

## SENIOR YEAR

ZY	303 Evol. & Syst. ....	5	ZY	524 Anim. Physiology .....	5	ZY	531 Wildl. Hab. Anal. ....	3
FY	523 Silviculture .....	4	ZY	401 Invert. Zoology .....	5	ZY	575 Ornithology .....	5
BY	506 Syst. Botany .....	5	ZY	576 Mammalogy .....	5	BST	501 Biol. Stats. ....	5

## TOTAL — 203 QUARTER HOURS

\* Chemistry may also be started with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Students not prepared to take MH 161 must pass MH 160 for no credit.

+ See advisor for technical electives.

In the event the first-year Veterinary College alternative is not followed, the following courses must be completed successfully to earn the B.S. degree in Wildlife Science:

Note: The B.S. degree in Wildlife Science Pre-Veterinary Medicine does not qualify the student for certification as associate wildlife biologist by the Wildlife Society. See advisor for information on certification requirements.

## Curriculum in Zoology Pre-Veterinary Medicine Option (VZY)

## FRESHMAN YEAR

## First Quarter

CH	103 Fund. Chem. I *	4
CH	103L Gen. Chem. Lab	1
U	101 Soc. & Cult.	3
MH	161 An. Geom. & Cal. ***	5
BI	101 Prin. of Biology	5
	ROTC or Elective	1

## Second Quarter

EH	110 Eng. Comp.	5
CH	104 Fund. Chem. II	4
CH	104L Gen. Chem. Lab	1
U	102 Polif. Econ.	3
BI	103 Animal Biology	5
	ROTC or Elective	1

## Third Quarter

CH	105 Fund. Chem. III	4
CH	105L Gen. Chem. Lab	1
U	103 Indiv. in Soc.	3
	Computer Sci.	3
	Tech. Elective ****	5
	ROTC or Elective	1

## SOPHOMORE YEAR

CH	207 Organic Chem.	4
CH	207L Org. Chem. Lab	1
PS	205 Int. Phys. I	3
PS	205L Phys. Lab	1
ZY	300 Genetics	5
	Core/History **	3
	ROTC or Elective	1

CH	208 Organic Chem.	3
CH	208L Org. Chem. Lab	2
PS	206 Intro. Physics II	3
PS	206L Physics Lab	1
EH	220 Great Books I	5
	Core/History **	3
	ROTC or Elective	1

ZY	303 Evol. & Syst.	5
PS	207 Intr. Phys. III	3
PS	207L Physics Lab	1
	Core/History **	3
EH	221 Great Books II	5
	ROTC or Elective	1

## JUNIOR YEAR

ZY	306 Prin. of Ecol.	5
ZY	402 Nat. Hist. Vert.	5
MB	300 Gen. Microbiology	5
	Tech. Elective ****	3

EH	400 Adv. Comp.	5
ADS	321 An. Biochem.	5
ZY	401 Inv. Zoology	5

ZY	Tech. Elective ****	4
	Elective	5
	Core/Fine Arts **	3
	Core/Philosophy **	5

## SENIOR YEAR

GL	110 Phys. Geology	5
ZY	310 Cell Biology	4
MH	162 An. Geom. & Calc.	5
	Elective	1

ZY	524 An. Physiology	5
ZY	301 Comp. Anat.	5
BI	102 Plant Biol.	5

GL	111 Hist. Geology	5
ZY	Elective	5
	Gen. Elective	5

## TOTAL — 204 QUARTER HOURS

\* Chemistry may also be started with CH 101. See advisor for details.

\*\* For University Core options to satisfy these requirements, see page 39.

\*\*\* Students not prepared to take MH 161 must pass MH 160 for no credit.

\*\*\*\* See advisor for technical electives.

In the event the first-year Veterinary College alternative is not followed, the indicated senior year courses must be completed successfully to receive the B.S. degree in zoology.

# College of Veterinary Medicine

J. THOMAS VAUGHAN, *Dean*

H. C. MORGAN, *Associate Dean, Administration & Academic Affairs*

S. D. BECKETT, *Associate Dean, Research & Graduate Studies;*

*Coordinator of Animal Health Research*

THE COLLEGE OF VETERINARY MEDICINE offers a fully accredited program of training leading to the degree of Doctor of Veterinary Medicine. The curriculum requires four years in the professional college after completion of a pre-professional course curriculum which may take more than four years for the average applicant.

## Admission

Although the largest percentage of students admitted are residents of Alabama, some spaces are available for non-Alabama students. Most of these are by contract through the Southern Regional Education Board (SREB), but a limited number of non-Alabama students not under a contract program with Auburn University may be accepted. Individuals in this category must have a minimum grade-point average of 3.0 on a 4.0 scale, must possess exceptional qualifications, pay non-resident university fees and be citizens of the United States. Alabama and SREB students must have a minimum grade-point average of 2.5 on a 4.0 system on all coursework attempted and on all required courses. A grade of D on any required course will not be accepted. In addition, the Committee on Admissions and Standards of the College of Veterinary Medicine may require a personal interview, a reading comprehension test or an examination on any required course. The College of Agriculture and the College of Sciences and Mathematics offer Pre-Veterinary curricula and are responsible for pre-veterinary counseling. Although farm experience and work with veterinarians are not absolute requirements for admission, applicants are urged to gain such training. Students without this experience frequently have difficulty with certain courses, particularly in the clinical areas.

Application for admission to either pre-veterinary curriculum should be made directly to the Admissions Office, Auburn University. Application for admission to the College of Veterinary Medicine, except for SREB students, should be made to the Chairman of Admissions, College of Veterinary Medicine, Auburn University, AL 36849. SREB students must apply through their appropriate state agency.

## Minimum Requirements for Pre-Veterinary Medicine

1. Completion of the Liberal Education Program as stated in the General Information section in this Bulletin.

2. Specific Course Requirements: Minimum pre-veterinary requirements for Alabama residents are exactly as listed for the pre-veterinary curriculum. The program in the College of Agriculture has the same courses, but they are distributed over nine quarters. Non-Alabama and SREB applicants must have acceptable equivalents which have been approved by the College of Veterinary Medicine. Individuals taking the pre-veterinary curriculum are expected to declare an academic major prior to their fifth quarter of enrollment.

3. All Transfer Courses must be equivalent in hours and content. CLEP substitutions are acceptable as stated in this catalog but only for biology, history and humanities. English credit can only be earned as stated in the Liberal Education Program. Courses will not be waived on the basis of degrees or "practical experience." Pass-Fail or Satisfactory-Unsatisfactory grades are not acceptable in required courses. Consideration will not be extended to anyone with an overall or required course grade-point average of less than 2.5 or who is not a bona fide resident at the time of application.

4. Time Limitation: All required courses in the advanced physical and biological science categories must have been completed within six calendar years prior to the anticipated date of enrollment in the College of Veterinary Medicine.

## Application Procedure

Admission of Alabama residents to the College of Veterinary Medicine must be gained through formal application made between September 15 and October 15 preceding the Fall Quarter in which admission is desired. The length of residence of Alabama applicants shall be a factor and they must be citizens of the United States. The final date for accepting applications from non-Alabama students is October 15 and SREB applicants should consult their advisors for their exact dates.

Application packets, available from the College of Veterinary Medicine or the Kentucky advisors, contain all materials necessary as well as the instructions for making application. A processing fee of \$25.00 is required of all applicants, and an additional \$15.00 is required of all who have not previously attended Auburn University.

If students are admitted to the College of Veterinary Medicine, they must submit one completed physical examination report on a form supplied by Auburn University at least three weeks prior to date of registration (not required by students formerly enrolled at Auburn University) and comply with the requirements of the rabies immunization program of the College. Also required are two supplemental official transcripts of any work completed after application is filed.

The final selection of students is made by the Committee on Admissions and Standards of the College of Veterinary Medicine, Auburn University. These selections are made from the applicants who have been certified by the committees in the respective states after giving due consideration to scholastic record and general adaptability for the profession. The right is reserved to accept or reject any applicant.

**Microscopes** — To be admitted to the College of Veterinary Medicine, a student must own a compound microscope acceptable to the faculty. The student must furnish a microscope in all courses requiring the use of this instrument.

**Admission under the Regional Plan** — Under the Regional Plan for Veterinary Training, the College of Veterinary Medicine currently serves two states: Alabama and Kentucky.

The Land-Grant institution in each state participating under the SREB plan maintains counseling and guidance service for students desiring admission to the College of Veterinary Medicine. Students attending other institutions should contact the Land-Grant School advisor in their state for information concerning admission requirements.

## Scholastic Requirements

All applicants and students in the professional program are subject to the academic and disciplinary regulations of the College of Veterinary Medicine in addition to those of Auburn University.

Any student who earns less than a 2.25 grade-point average for any quarter will be placed on academic probation. A student who fails to earn a 2.25 grade-point average in each of the succeeding two quarters of enrollment may be dropped from the rolls of the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have an overall average of 2.25 for an academic year or who does not have a veterinary college cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

A student who makes a grade of F on any course may be required to withdraw from the College of Veterinary Medicine until such time as the course is offered again. Such a student may be required to repeat certain other courses in the curriculum for that quarter.

Clinical courses are unique in that the art and skills to be developed in them can only be acquired by full participation in the laboratories. The attendance in these courses is required except in case of illness or other extenuating circumstances as may be judged by the involved instructor. The grading in these clinical laboratory courses is primarily by subjective evaluation. When a course involves student rotation through several disciplines or sections, the student must receive a passing grade in each area before a passing grade can be given for the course.

The responsibility for counseling is shared by the Faculty of this College and the Career Development Service.



### Required Withdrawal

The faculty of the College of Veterinary Medicine reserves the right to require the withdrawal at any time of any student who in the judgment of the admissions and standards committee is not profiting from the instruction offered, who is neglectful, irregular, dishonest or indifferent in the performance of required duties and studies or whose character or conduct is inconsistent with good order of the veterinary college or with the standard of the veterinary profession.

### Requirements for Graduation

To be eligible for the D.V.M. degree, candidates must complete all of the required courses in the order listed in the curriculum in veterinary medicine with a minimum overall grade-point average of 2.25. Following completion of all academic work, each student will be required to serve a preceptorship of one quarter with an approved practicing veterinarian. A certificate of satisfactory completion of a preceptorship will be required for graduation.

A graduation fee of \$15.00 must be paid at the beginning of the quarter of graduation and all indebtedness due the institution must be paid prior to graduation.

## Curriculum in Veterinary Medicine (VM)

<b>First Quarter</b>			<b>Second Quarter</b>			<b>Third Quarter</b>		
VM	320 Anatomy I .....	5	VM	321 Anatomy II .....	5	VM	322 Anatomy III .....	5
VM	326 Micro. Anat. I .....	3	VM	327 Micro. Anat. II .....	4	VM	328 Micro. Anat. III .....	4
VM	313 Physiology I .....	5	VM	314 Physiology II .....	5	VM	315 Physiology III .....	5
VM	300 Orientation .....	2	VM	411 Microbiology II .....	5	VM	412 Microbiology III .....	5
VM	331 Microbiology I .....	4						
<b>SECOND YEAR</b>								
VM	405 Pathology I .....	5	VM	406 Pathology II .....	5	VM	423 Clinical Pathology .....	5
VM	413 Microbiology IV .....	5	VM	410 Parasitology II .....	4	VM	407 Pathology III .....	4
VM	409 Parasitology I .....	4	VM	401 Pharmacology II .....	3	VM	427 S.A. Med. & Surg. I .....	4
VM	319 Pharmacology I .....	5	VM	432 Microbiology V .....	3	VM	402 Pharmacology III .....	2
VM	429 S.A. Phy. Diagnosis .....	1	VM	316 Physiology IV .....	5	VM	428 L.A. Phys. Diag. .....	2
						VM	421 Intra. to Surg. .....	3
<b>THIRD YEAR*</b>								
VM	414 L.A. Med. I .....	5	VM	433 Avian Diseases .....	4	VM	440 S.A. Clinics I .....	7
VM	424 S.A. Med. & Surg. II .....	3	VM	425 S.A. Med. & Surg. III .....	5	VM	444 L.A. Clinics I .....	7
VM	408 Lab. An. Med. .....	3	VM	420 L.A. Med. II .....	5	VM	435 Theriogenology .....	5
VM	431 Vet. Radiology .....	4	VM	422 L.A. Surgery .....	3			
VM	448 S.A. Surg. Pract. I .....	2	VM	449 S.A. Surg. Pract. II .....	2			
VM	403 Vet. Toxicology .....	3	VM	426 Clin. Path. Lab. .....	1			
<b>FOURTH YEAR*</b>								
VM	437 Vet. Toxicology .....	3	VM	442 S.A. Clinics III .....	7	VM	443 S.A. Clinics IV .....	5
VM	441 S.A. Clinics II .....	7	VM	446 L.A. Clinics III .....	7	VM	447 L.A. Clinics IV .....	5
VM	445 L.A. Clinics II .....	7	VM	439 L.A. Med. IV .....	5	VM	430 Jurisp. & Ethics .....	2
VM	438 L.A. Med. III .....	2				VM	455 Ethology .....	1
						VM	453 Practice Mgmt. .....	2
						VM	456 Adv. Vet. Appl. .....	4
<b>SPRING QUARTER</b>								
VM	454 Preceptorship .....	0						
<b>TOTAL — 233 QUARTER HOURS</b>								

\*Beginning with the third quarter of the third year, clinical participation will be continuous, divided into five periods called Quinaries. Fee payments and grade reporting will follow the university quarterly schedule.

## Graduate Programs

Master of Science degrees are offered in each department in the College of Veterinary Medicine. The Doctor of Philosophy degree is offered in a college-wide program. Refer to the *Graduate School Bulletin* for further information.



# The Graduate School

NORMAN J. DOORENBOS, *Associate Vice President for Academic Affairs  
and Dean*

MICHAEL LISANO, *Associate Dean*

A STUDENT with a bachelor's degree from an accredited college or university may apply to the Dean of the Graduate School for admission. Application forms for admission may be secured from the Graduate School and all materials must be submitted at least three weeks before registration.

The *Graduate School Bulletin* should be consulted for detailed information on the regulations of the Graduate School, the courses offered for graduate credit, the requirements for degrees, fellowships and assistantships and other matters pertaining to graduate work in this institution. Undergraduates wishing to register for graduate courses should consult the *Graduate School Bulletin* for regulations concerning such registration. A bulletin may be obtained upon request from the Dean of the Graduate School.

## Graduate Degrees

### The Master's Program

Master of Science degrees are offered in the areas of Aerospace Engineering; Agricultural Economics and Rural Sociology; Agricultural Engineering, Agronomy and Soils; Anatomy and Histology; Algebra, Combinatorics, and Analysis; Animal and Dairy Sciences; Botany and Microbiology; Chemical Engineering; Chemistry; Civil Engineering; Communication Disorders; Computer Science and Engineering; Consumer Affairs; Counseling and Counseling Psychology; Education; Curriculum and Teaching; Economics; Educational Leadership; Educational Media; Electrical Engineering; Entomology; Family and Child Development; Fisheries and Allied Aquacultures; Forestry; Foundations, Analysis, and Topology; Geology; Health and Human Performance; Horticulture; Industrial Engineering; Large Animal Surgery and Medicine; Management; Manufacturing Systems Engineering; Materials Engineering; Mathematics; Mechanical Engineering; Microbiology; Nuclear Science; Nutrition; Nutrition and Foods; Ornamental Horticulture; Pathobiology; Pharmacal Sciences; Pharmacy Care Systems; Physics; Physiology; Physiology and Pharmacology; Plant Pathology; Poultry Science; Psychology; Radiology; Rehabilitation and Special Education; Small Animal Surgery and Medicine; Sociology; Textile Science; Toxicology; Vocational and Adult Education; Wildlife Science; and Zoology.

Master of Arts degrees are offered in the areas of Communication, English, French, History, Political Science, Sociology and Spanish.

Other Master's Degrees: Master of Accountancy, Master of Aerospace Engineering, Master of Agriculture, Master of Applied Mathematics, Master of Aquaculture, Master of Arts in College Teaching, Master of Business Administration, Master of Chemical Engineering, Master of Civil Engineering, Master of Communication, Master of Communication Disorders, Master of Community Planning, Master of Computer Science and Engineering, Master of Education, Master of Electrical Engineering, Master of Fine Arts, Master of Forestry, Master of French Studies, Master of Hispanic Studies, Master of Industrial Design, Master of Industrial Engineering, Master of Management Information Systems, Master of Manufacturing Systems Engineering, Master of Materials Engineering, Master of Mechanical Engineering, Master of Music, Master of Probability and Statistics, Master of Public Administration and Master of Zoological Studies.

### The Doctoral Degree Program

The Doctor of Education degree is offered in the departments of Counseling and Counseling Psychology, Educational Foundations, Leadership and Technology, Health and Human Performance and Vocational and Adult Education.

The Doctor of Philosophy degree is offered in the areas of Aerospace Engineering, Agricultural Economics and Rural Sociology, Agronomy and Soils, Algebra, Combinatorics and Analysis, Animal and Dairy Sciences, Botany and Microbiology, Chemical Engineering, Chemistry, Civil Engineering, Computer Science and Engineering, Counseling Psychology, Counselor Education, Curriculum and Teaching, Electrical Engineering, English, Entomology, Family and Child Development, Fisheries and Allied Aquacultures, Forestry, Foundations, Analysis and Topology, History, Industrial Engineering, Management, Materials Engineering, Mechanical Engineering, Physical Education, Physics, Plant Pathology, Poultry Science, Psychology, Public Administration,

Rehabilitation and Special Education, Wildlife Science and Zoology and interdepartmental programs in Economics, Nutrition, Pharmaceutical Sciences, Physiology and Veterinary Medicine.

### Research Program with the ORAU

Auburn University is one of the sponsoring institutions of the Oak Ridge Associated Universities research program located at Oak Ridge, Tennessee. Through this cooperative association Auburn's graduate research programs have at their disposal the facilities of the National Laboratories in Oak Ridge and the research staffs of these laboratories.

Information on the opportunities for research in the Oak Ridge Laboratories is available in the office of the Vice President for Research.

## Interdepartmental and Interdisciplinary Curricula

### Graduate

#### Interdepartmental Programs

The Graduate School offers five interdepartmental programs which lead to the Doctor of Philosophy degree: Economics, Nutrition, Pharmaceutical Sciences, Physiology and Veterinary Medicine. Students in the interdepartmental Sociology program may earn the Master of Arts, Master of Science or Master of Arts in College Teaching degree. Students in Nutrition and Physiology may also earn the Master of Science degree. Departments and schools cooperating in the Nutrition program are: Animal and Dairy Sciences, Fisheries and Allied Aquacultures, Nutrition and Foods, Poultry Science and the College of Veterinary Medicine. The faculty and students in Physiology are drawn from the departments of Animal and Dairy Sciences, Chemistry, Health and Human Performance, Pharmacy, Physics, Poultry Science, Psychology, Veterinary Physiology and Pharmacology, Veterinary Anatomy and Histology and Zoology-Wildlife Science. The departments of Sociology and Anthropology and Agricultural Economics and Rural Sociology are the cooperating departments in Sociology. The Master of Science in Textile Science is offered jointly by the departments of Consumer Affairs and Textile Engineering.

# Reserve Officers' Training Corps

## Department of Military Science

COLONEL WILLIAM F. ROBERTS

*Professor of Military Science and Commander*

THE PURPOSE of the Army ROTC program is to select, train and motivate the future leadership of the active Army, Army National Guard and Army Reserve. The initial ROTC courses serve to acquaint Auburn students with the Army and its role in our society, while the advanced ROTC courses prepare a student for service as a commissioned officer. The overall Army ROTC curriculum prepares students to become effective leaders and managers in a variety of challenging fields.

The curriculum is divided into two courses; a General Military Course open to all freshmen and sophomores and an Officer Development Course for qualified juniors, seniors and graduate students. Successful completion of both courses and award of a bachelor's degree constitute the normal progression to gaining a commission as a Second Lieutenant. Courses are available to both men and women students.

Students undecided about pursuing commissions may keep this option open by participating in the General Military Course together with their chosen curriculum. This provides freshmen and sophomores the opportunity to make an educated decision on the advantages of gaining an officer's commission while incurring no military obligation. Successful completion of the General Military Course or commensurate training, a minimum 2.0 grade point average and medical qualifications are prerequisites for enrollment in the Officer Development Course.

### GENERAL MILITARY COURSE

**Basic Program** — The Basic Military Science courses enrich the freshman and sophomore students' courses of study and count toward their graduation requirements. Completing these courses also opens up an additional career option, enabling them to participate in advanced studies toward award of an officer's commission. Subsequently, they may gain either active service or service in the National Guard or Reserves while pursuing their civilian career choices.

The basic program consists of a six-quarter block of instruction taken during the freshman and sophomore years. Successful completion of MS 101, 102, 103, plus MS 201, 202, 203, together with leadership lab each quarter, satisfies the academic requirements for progression to the Officer Development Course. One credit hour per quarter is earned in each of the courses. Approval may be obtained to allow completion of all six courses within one academic year.

#### Curriculum In The General Military Course (MS I/MS II) (Basic Program)

MS 101 The U.S. Army Today\*

MS 102 Contemp. Military Issues\*

MS 103 Modern Military Weapons and Operations\*

MS 201 Military Power and National Security\*

MS 202 Map Reading\*

MS 203 Leadership and Management\*

\*Includes Leadership Lab.

Other MS courses provide unique hands-on training in mountaineering, tactics and wilderness skills. The Professor of Military Science may grant basic program credit for completion of these hands-on training courses. Selected courses are offered Fall, Winter and Spring Quarters with two credit hours earned for each course. Elective credits apply toward degree requirements in all schools of the university. The following three courses are available for Elective credit:

MS 104 Mountaineering

MS 305 Ranger Operations (Different Instruction is offered each quarter.)

MS 139 Wilderness Skills

### Optional Basic Camp

Those academically qualified students who are unable to fulfill the requirements of the Basic Program during their freshman and sophomore years may qualify themselves for admission to the Officer Development Course by successfully completing Basic Camp preparatory training. The basic camp option consists of a six-week training period conducted at an active Army post during the summer months. Students desiring to exercise this option are required to submit a formal application and pass a general physical.



Students electing the basic camp training program will receive approximately \$650.00 in addition to travel expenses to and from camp. Uniforms, housing, medical care and meals are furnished by the government during the camp.

Deadline for applications is May 30. Interested students should contact the Military Science Department at the start of Spring Quarter.

## OFFICER DEVELOPMENT COURSE

**Advanced Program** — The Advanced Program is designed to develop fully a candidate's leadership and management potential, physical stamina, and poise, as well as those personal characteristics desired in an Army Officer. The program's objective is to produce the highest caliber junior officer fully capable of command and management responsibilities in the modern Army and the business world.

The Officer Development Course consists of a six-quarter block of instruction taken during the junior and senior years. Successful completion of six courses together with leadership laboratory each quarter fulfills military science academic requirements for award of an officer's commission. Three credit hours per quarter are earned in each of the courses. Students receive a subsistence allowance of \$100.00 a month (tax free) not to exceed \$1000.00 per academic year, while enrolled.

Service veterans, junior or military college transfers, members of the National Guard or Army Reserve, and former military academy cadets may qualify for direct entry into the Officer Development Course.

Advanced program students are eligible to participate in the Simultaneous Membership Program with the Army National Guard or Army Reserve. Students participating in this program affiliate with an Army unit as a student officer thus affording them the opportunity for enhanced leadership development. Students in this program receive an additional \$160.00 per month.

Students enrolled in the Officer Development Course are also required to complete successfully a six-week Advanced Camp at Fort Riley, Kansas, during the summer to become eligible for commissioning. Attendance at Advanced Camp normally occurs in the summer between the junior and senior years. The purpose of Advanced Camp training is to provide each candidate hands-on experience in leadership development positions as well as extensive training in military tactics, techniques and related subjects vital to success as a junior officer. Students attending Advanced Camp receive approximately \$825.00 in addition to travel expenses to and from Fort Riley. Uniforms, housing, medical care and meals are furnished by the government during the camp.

Additional voluntary training at one or more of a variety of active Army service schools is available to selected students during the summer. Students may select attendance at Airborne School, Air Assault School, The Northern Warfare Training Center and Cadet Troop Leadership Training. Students who successfully complete the appropriate course are authorized to wear the coveted Parachutist Badge and Air Assault Badge.

Students who successfully complete the Army ROTC curriculum and who gain a bachelor's degree serve on active duty or with the Army National Guard or Army Reserve. Outstanding candidates who are selected as Distinguished Military Students may gain Regular Army commissions. Active duty is for a period of three years with the opportunity for quality officers to apply for extended service. Current salary for a married Second Lieutenant is \$23,916.43. Medical and other benefits are also provided at no cost. The following courses constitute the Advanced Program.

### Curriculum In The Officer Development Course (MS III/IV) (Advanced Program)

MS 301 Land Navigation Techniques*	MS 302 Military Training and Instruction Techniques*
MS 303 Military Qualification Skills*	MS 401 Military Justice and Ethics*
MS 402 Adv. Leadership and Management I*	MS 403 Adv. Military Leadership and Management II*
MS 404 Leadership Laboratory	

\*Includes Leadership Lab and physical conditioning three days a week.

## Professional Military Education Requirements

All Army ROTC cadets are required to complete one quarter of selected undergraduate courses in five designated fields of study prior to graduation. In addition, scholarship cadets are required to complete successfully one quarter of a foreign language course. The fields of study and approved courses are:

Written Communication Skills: EH 101, 102, 103, 105, 106, 411, 420, EHA 304, 307, 315, PA 211, JM 221, 322

Humanities: PA 202, 214, 222, PG 211, 212, SY 201, ANT 203

Military History: HY 309\*

Computer Literacy: CSE 100 through 440

Math Reasoning: MH 100 through 399, MN 274, PA 211, 220

Foreign Language\*\*

\*Alternate course may be taken with PMS approval.

\*\*Required only for scholarship cadets.

## Scholarship Programs

Each year the Army offers a variety of full scholarship programs to those young men and women who have demonstrated outstanding academic scholarship and leadership potential. Four-year scholarships are awarded incoming freshmen through national merit competition. Three- and two-year scholarships are available on a national competitive basis. Scholarships provide full tuition to both resident and out-of-state students, textbooks, materials and laboratory fees in addition to a \$100 a month tax free allowance.

## Army Nurse Corps Option

Students enrolled in the School of Nursing curriculum leading to the degree of Bachelor of Science in Nursing may simultaneously qualify for commissions as Second Lieutenants in the Army Nurse Corps.

Nursing students qualify for entry into the Officer Development Course through satisfactory completion of either the General Military Course, the Basic Camp option or equivalent training.

Nursing students participate in a two-week summer Advanced Camp training program and an Army nurse training program. The alternate advanced training is a voluntary six-week program for nursing students at selected medical treatment facilities throughout the United States. It is structured to provide practical and leadership experience in the clinical setting. The primary focus is providing nursing cadets an experience which integrates clinical, interpersonal and leadership knowledge and skills. Emphasis is placed on practical experience under the direct supervision of an Army Nurse Corps Officer who acts as the cadet's preceptor throughout the camp period.

## Department of Naval Science

CAPTAIN RICHARD H. PHELAN, USN

*Commanding Officer and Professor of Naval Science*

THE MISSION OF NROTC is to develop Midshipmen mentally, morally and physically and to commission college graduates as Naval Officers who possess a basic professional potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship and government. All NROTC Programs are open to qualified men and women students. All Naval Science courses, basic and advanced, are open to all Auburn students regardless of affiliation with the NROTC Program.

### Types of NROTC Programs

1. NROTC Navy-Marine Scholarship Program. Successful completion leads to commission in regular Navy or Marine Corps. Minimum active duty service is four years.

Tuition, fees, and all textbooks are paid for by the Government. Subsistence pay is \$100 per month for a maximum of 40 months. Active duty pay for summer training is approximately \$525 per month with living quarters and meals provided.

Although the Navy emphasizes engineering and science majors, students may take most Auburn University majors leading to baccalaureate degrees. In addition to the requirements of their major, NROTC students are required to complete 29 quarter hours of Naval Science. Summer activities include two at-sea training cruises and one summer period of career orientation lasting from four to eight weeks each. Marine Option students participate in a six-week orientation at Quantico, VA in lieu of the second at-sea training cruise.

Entrance to the Navy-Marine Scholarship Program is via nationwide competition. Applicants must make independent arrangements to take either the Scholastic Aptitude Test or the American College Test.

Scholarship students may resign without obligation any time prior to the beginning of the second year in the Program.

2. Four-Year NROTC Navy-Marine College Program. Leads to a commission in the Navy or Marine Corps Reserve. Subsistence pay is \$100 per month for a maximum of 20 months during the final two years of training. Minimum active duty service is three years (3 1/2 years for Marines). Any Auburn student may enter the College Program through application to the Professor of Naval Science.

Four-year College Program students may resign from the Program at any time without obligation.

3. Two-Year NROTC Navy-Marine Scholarship and College Programs. Selections for these programs are made on a national basis from nominations submitted by the Professors of Naval Science. Selected applicants attend the Naval Science Institute (NSI) for six weeks during the summer prior to the junior year. Successful NSI completion qualifies students for enrollment in the advanced course of the NROTC Program.

Students in both the four and two-year programs may apply for the Scholarship Program through nomination by the Professor of Naval Science for appointment by the Chief of Naval Education and Training as Scholarship students.

College Program students must complete Naval Science requirements prior to or concurrently with receipt of a baccalaureate degree. Summer training consists of at-sea training cruise between junior and senior years. Students desiring commissions in the Marine Corps will participate in a six-week orientation at Quantico, VA in lieu of at-sea training.

Qualifications for enrollment, application blanks, and information bulletins are available at high schools, colleges, recruiting stations and the Auburn NROTC Unit.

### Equipment

Uniforms, Naval Science textbooks and equipment necessary for the NROTC Program are furnished in all four programs.

## Curriculum

The Naval Science curriculum consists of the following class/laboratory hours per week: Freshmen, 2/2 hours; Sophomores, 3/2 hours; Navy Option Juniors, 4/2 hours; Marine Option Juniors, 3/2 hours; Seniors, 3/2 hours.

Naval Science subjects carried during the four-year curriculum are listed in the Description of Courses section of this Bulletin. Only 300/400 series subjects are applicable to the Two-Year Programs.

Naval Science course hours are considered as part of the normal quarterly loads; however, Auburn University graduation requirements are increased 11 to 20 hours, depending upon the College or School in which the student is enrolled, over the number of hours listed in the *Auburn University Bulletin*. Navy Option Scholarship students must also complete calculus and physics courses.

# Department of Air Force Aerospace Studies (AFROTC)

COLONEL JOHN R. WINGFIELD III

*Commander and Professor of Aerospace Studies*

AFROTC is the nation's largest commissioning source of Air Force Officers. It provides a basic understanding of the role of air power, leadership and management in the Air Force. Enrollment in the General Military Course is open to all freshman and sophomore men and women and does not require a military commitment. The Professional Officer Course is open to all university juniors and seniors, and leads directly to an Air Force commission for those who are AFROTC cadets.

## General Military Course (GMC)

**Basic Course** — The General Military Course comprises one class hour and one Leadership Laboratory hour per week. One credit hour is allowed for each quarter of the six quarter basic courses. Up to six credit hours may be applied toward the total credits required for graduation. Leadership Laboratory includes instruction in drill and ceremonies and briefings by various Air Force commands and staff agencies. Students are provided the opportunity to visit various Air Force bases to acquaint them with operational Air Force units.

### **Curriculum in the General Military Course**

AF 101-102-103 The Air Force Today

AF 201-202-203 The Development of Air Power

## Professional Officer Course (POC)

**Advanced Course** — The Professional Officer Course consists of a six-quarter course series normally taken during the junior and senior years. Enrollment in the advanced course is also open to graduate students if they have six-quarters of school remaining. Three classroom hours of instruction and one hour of Leadership Laboratory are taken per week. Three credit hours per quarter or a total of 18 credit hours are granted for completion of the Professional Officer Course; however, only 12 credit hours may be applied toward the total credits required for graduation. Students enrolled in the program are given a monthly subsistence allowance of \$100.00. All POC cadets must complete a course in mathematics reasoning.

### **Curriculum in the Professional Officer Course**

AF 301-302-303 Air Force Management and Leadership

AF 401-402-403 National Security Forces in Contemporary American Society

## Field Training Course

Applicants for the Professional Officer Course attend a summer Field Training Course between their sophomore and junior years. The Air Force furnishes uniforms, housing, medical care, insurance, rations, a round trip travel allowance and military pay at field training. Students attend a four-week course if they have completed the GMC or equivalent. If a student has no previous military training, a six-week field training is mandatory before POC entry.

## College Scholarship Program (CSP)

Four, three and one-half, three, two and one-half, and two year Air Force ROTC scholarships are available for male and female students who qualify. Scholarships provide full tuition, laboratory expenses and incidental fees, textbooks, \$100.00 a month personal allowance (tax free) and all uniform items. Scholarships are awarded to qualified students based on application to, and selection by national selection boards. Scholarship students with little or no previous foreign language training or experience must complete at least two quarters of a major Indo-European or Asian language. In addition, all CSP cadets must complete one quarter of English Composition.

## Light Aircraft Training (LATR)

Light Aircraft Training is conducted at the completion of the cadets' Field Training course or between the junior and senior years. It provides the pilot category cadets with 14 hours of flight training and serves as a screening program to insure that the student has the aptitude and motivation for a career as an Air Force pilot. LATR is at no expense to the cadet and is provided by a private contractor monitored by USAF personnel.

# Courses of Instruction

THIS SECTION lists and describes all courses taught by the departments of the University. The courses are presented by subjects, arranged alphabetically. The subject name (the heading in large type) is followed by the departmental symbol in parentheses. Below the subject appears a list of the departmental faculty.

The subject name (symbol) together with the course number constitutes the official designation for the course for purposes of registration and official records. The specific course title appears in boldface following the course number. The figures in parentheses denote the number of quarter hours of credit for the course. Following the credit hours are listed lecture and laboratory clock hours, if applicable. If none is listed, the course consists of lecture hours equal in number to course credit. Next appear the prerequisites, if applicable.

Courses are numbered according to the following system:

- 101-199 Courses primarily for freshmen.
- 201-299 Courses primarily for sophomores.
- 301-399 Courses primarily for juniors.
- 401-499 Courses primarily for seniors. Not open to graduate students.
- 501-599 Courses for advanced undergraduate and graduate students; and for fifth year students in professional curricula. **Junior Standing Required For Enrollment At This Level.**
- 601-799 Courses for graduate students.

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**Note:** COI Is Used For Consent Of Instructor In Course Description Headings.

## University Courses (U)

The following courses, interdisciplinary and experimental in character, enable students to see in a wide perspective the relationship of individual courses in his curriculum and to understand more fully the dominant ideas and concepts confronting him in the modern world. University Courses are open to students in all curricula.

100. THE AUBURN EXPERIENCE (2). LEC. 1, LAB. 2. Open to freshmen only. Introduction to the university and its resources, assistance in academic performance and transition to college life.
101. SOCIETIES AND CULTURES (3). An interdisciplinary course introducing students to societies and cultures as studied by anthropology, geography and sociology.
102. POLITICAL ECONOMY (3). The institutional setting of U.S. economy and U.S. political system and interaction between the two.
103. THE INDIVIDUAL AND SOCIETY (3). An introduction to human action through the study of individual and social psychology.
105. INTRODUCTION TO THE ARTS (3). An introduction to the processes involved in creating, understanding and appreciating the arts, including architecture, visual and plastic arts, dance, music and theatre. Administered by Department of Theatre.
135. COMPUTER LITERACY (2). Comprehensive overview of computers, computer science terminology and computer applications and utilization in work and home settings. This course cannot be applied toward graduation from the College of Business.
190. THEORY AND PRACTICUM IN COLLEGIATE SPORTS (1). Conditioning activities in preparation for competitive football. Skills and fundamental techniques of physical activities related to football. Coaching techniques applicable to all areas of athletic competition. S-U graded.
199. PRE-HEALTH PROFESSIONS ORIENTATION (1). Orientation and guidance for all freshmen who are planning to seek admittance to health professions schools such as medicine, dentistry, optometry, physical therapy, pharmacy, occupational therapy, veterinary medicine and podiatry.
201. FORUM (1). May be taken more than one quarter for a maximum of 3 credits. S-U only. Credit is given in recognition of significant attendance at public academic lectures, concerts and other events. Requires attendance at seven of the 15-20 FORUM-designated events, which are chosen from various University lecture and concert series and departmental programs. Administered by Department of Political Science.
- 270-271-272. THE HUMAN ODYSSEY: SCIENCES AND HUMANITIES (3). LEC. 2, LAB. 1. Explores the historic interaction between science and culture. Students assemble weekly to view a film or hear a lecture. Subsequent small classes are devoted to discussion of the film or lecture and auxiliary readings. Limited enrollment. Preference is given to upper division students.
275. INTERPERSONAL RELATIONS (3). A multi-disciplinary study of methods used by human beings in their interactions that tend to be mutually rewarding. Emphasis is on practical applications within the context of the student's present fields of study and projected fields of work.
277. HONORS LYCEUM (1). Pr., membership in University Honors Program. May be repeated for a maximum of 6 credits. S-U only. Weekly academic lectures followed by discussion and interaction.

- 280-281-282. HONORS HUMAN ODYSSEY (3). LEC. 2, LAB. 1. Explores the historic interaction between science and culture. Students assemble weekly to view a film or hear a lecture. Subsequent small classes are devoted to discussion of the film or lecture and auxiliary readings. Limited enrollment.
305. THE MODEL UNITED NATIONS (1). May be taken more than one quarter for a maximum of 3 credits. S-U only. Preparation of materials for, and active participation in, the sessions of the Model United Nations program held annually on the campus. Administered by Department of Political Science.
399. EXPERIENTIAL LEARNING (2-6). Pr., sophomore standing and COI. May be repeated once for credit. A maximum of 6 credits allowed. Students may obtain academic credit for participation in learning experiences of a practical nature available outside the normal curricular offerings of the University. Normally S-U Graded.
400. FRANKLIN SEMINAR IN AMERICAN CULTURE (3-5). Specific topics and lectures presented by distinguished teachers and scholars.

## Interdepartmental Education (IED)

Included in this section are program areas and course listings designed and taught on the interdepartmental basis.

517. PROFESSIONAL WRITING IN EDUCATION (2). Fundamentals of education discourse; strategies and techniques in educational writing; reference sources; the preparation of manuscripts for publication in professional journals.

## Accountancy (AC)

Professors Alderman and Rouse

Associate Professors Colbert, Criss, Dinius, Fields, Tabor, *Director*, Wilson and Worthington

Assistant Professors Beard, Crowell, Krippel, Minyard, Price and Weld

Instructors Christensen, Cook, Evans, Haygood and Taylor

Effective Fall Quarter 1990, a 2.0 GPA will be required for enrollment in any Business course at the 300-level or above. This rule will apply to both Business and non-Business students.

211. PRINCIPLES OF ACCOUNTING I (4). Pr., sophomore standing. Basic accounting principles, including the accounting cycle and preparation of financial statements. AC 211 is not open to students with credit in AC 215.
212. PRINCIPLES OF ACCOUNTING II (4). Pr., AC 211. A continuation of accounting principles with emphasis on their application to partnerships, corporations, and preparation and analysis of various financial statements.
213. MANAGERIAL COST AND BUDGETING (4). Pr., AC 212 and non-Accounting major. Introductory cost accounting and budgeting with some emphasis on distribution costs and managerial accounting problems.
215. FUNDAMENTALS OF GENERAL AND COST ACCOUNTING (5). Pr., sophomore standing. Fundamental concepts and principles of general and cost accounting. Emphasis on accumulating, reporting and interpreting cost data in the production area of business operations. (Not open to undergraduates majoring in Business. Credit in AC 211 precludes credit for AC 215.)
311. INTERMEDIATE ACCOUNTING I (5). Pr., AC 212 and junior standing. Accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities and investments.
312. INTERMEDIATE ACCOUNTING II (5). Pr., AC 311 with a grade of C or better. A continuation of accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long term liabilities and investments.
313. INTERMEDIATE ACCOUNTING III (5). Pr., AC 312, a GPA of 2.5 or better in AC 311 and 312 and a GPA of 2.7 or better in all accounting courses taken. A continuation of accounting principles and theory with emphasis on pension costs, leases, analysis of financial statements and funds flow, segment reporting and interim reporting.
314. INCOME TAX ACCOUNTING (5). Pr., AC 311. Interpretation of the regulations, preparation of returns and the keeping of accounting records for tax purposes.
319. BUSINESS LAW FOR ACCOUNTANTS (5). Pr., AC 312. Business law applied to the environment and applications of accountancy.
400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by the faculty committee.
415. ACCOUNTING INFORMATION SYSTEMS (5). Pr., AC 313. An introduction to accounting information systems, including both manual and computerized operations. There is a specific emphasis on documentation and controls for the various accounting cycles. Applications of Lotus and dBase software to accounting problems are involved.
416. AUDITING I (5). Pr., AC 415 and senior standing. The principles of auditing including auditing standards, ethics, legal liability, objectives, controls, evidence, planning, sampling concepts, credit reports, audit reports and other reports.
417. COST ACCOUNTING (5). Pr., AC 415. Accounting principles and procedures involved in job-order, process and standard cost accounting.
470. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
490. SPECIAL PROBLEMS. (1-10). Pr., AC 313 and senior standing. Advanced individual research and study of accountancy under guidance of a faculty member.
499. SEMINAR IN CURRENT ACCOUNTING TOPICS (1). Pr., graduating seniors. The current literature, problems and controversies affecting the accounting profession.

## Aerospace Engineering (AE)

Professors Williams, Head, Cochran and Cutchins

Associate Professors Burkhalter, Foster, Nichols and Spring

Assistant Professors Cicci, Gross, Hartfield, Innocenti and Jenkins

General Curriculum, GC, students (those with undeclared major) may enroll only with departmental consent.

302. AIRLOADS (4). LEC. 3, LAB. 3. Pr., ME 340. Application of the basic equations of fluid dynamics to the prediction of pressure distribution, wing loading and hinge moments. Propeller design and selection.
303. THEORETICAL AERODYNAMICS I (5). Pr., ME 340. Fundamental analysis of aerodynamics and potential flow theory. Correlation of potential flow theory with experimental results.
304. THEORETICAL AERODYNAMICS II (4). LEC. 3, LAB. 3. Pr., AE 303. Compressible fluids; first and second law of thermodynamics; one-dimensional flow with area changes, friction and heat transfer; mach waves; Prandtl-Meyer flow, oblique and normal; shock waves, characteristics, supersonic nozzle design; linearized compressible flow and airfoils in supersonic flow.
305. FLIGHT PERFORMANCE (3). Pr., AE 302. Equations of motion and solution techniques for vehicle performance analysis including effects of propulsion system and aerodynamic variations.
307. AEROSPACE STRUCTURES I (5). LEC. 4, LAB. 3. Pr., EGR 207. Basic structural analysis. Shear and bending in monocoque structures. Deflections of beams and frames. Column and plate buckling. The laboratory portion is devoted to experimental techniques in stress analysis.
310. AEROSPACE ANALYSIS (3). Pr., MH 265, ME 321. Linear and non-linear systems, linearization procedures and linear systems analysis techniques. Other special techniques as required by advanced courses.
311. AEROSPACE MATERIALS (3). Pr., AE 307. Nomenclature, coding systems, physical and structural properties, applications and fabrication techniques as applied to aerospace materials.
326. FUNDAMENTALS OF AEROSPACE DYNAMICS (3). Pr., AE 310. Dynamics of aerospace vehicles in moving reference frames; Eulerian formulation for the vehicle as a rigid body; Lagrangian formulation and small oscillation theory. Provides a unified basis for further studies in aircraft vibration, flight dynamics and space flight mechanics.
332. ASTRODYNAMICS I (3). Pr., AE 326 or COI. Geometry of the solar system, detailed analysis of two-body dynamics and introduction to artificial satellite orbits; Hohmann transfer and patched conics for lunar and interplanetary trajectories. Elements of orbit determination.
334. AEROSPACE SYSTEMS ANALYSIS (3). Pr., AE 310, 326. Modeling of dynamic systems, linearization, stability of linear systems, time response performances.
339. STATIC STABILITY AND CONTROL (4). LEC. 3, LAB. 3. Pr., AE 302. Introduction to static stability and control of flight vehicles including laboratory techniques for determination of stability parameters.
400. VISCOUS AERODYNAMICS (3). Pr., AE 304. Theoretical background essential to a fundamental understanding of laminar and turbulent boundary layers and their relations to skin friction and heat transfer.
409. AEROSPACE STRUCTURES II (5). LEC. 4, LAB. 3. Pr., CSE 120 or equivalent knowledge of FORTRAN programming, AE 307, 310. A continuation of AE 307. An introduction to the finite element method. The laboratory portion is devoted to the solution of structural problems on the digital computer.
415. JET PROPULSION (5). LEC. 4, LAB. 3. Pr., AE 304. Internal aerodynamics and thermodynamics of rockets and air-breathing jet engines. Jet nozzles. Detailed analysis of flow through turbojet compressors, combustors and turbines.
447. AEROSPACE DESIGN I (2). LEC. 1, LAB. 3. Pr. AE 304, 305, 307, 332 and 339. An application of the design process with emphasis on the development of creative thinking and team efforts. An investigation of a current aerospace problem which results in the presentation of oral and written technical reports. A three-quarter sequence with AE 448 and 449.
448. AEROSPACE DESIGN II (2). LEC. 1, LAB. 3. Pr., AE 447. A continuation of AE 447.
449. AEROSPACE DESIGN III (2). LEC. 1, LAB. 3. Pr., AE 448. A continuation of AE 448.
479. HONORS THESIS (1-6). Pr., COI and department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (AE Honors Program students only. May be repeated once for a maximum of 6 total credit hours.)
491. SPECIAL PROBLEMS. (1-5 CREDIT HOURS TO BE ARRANGED). Pr., departmental approval. Not open to graduate students.

## ADVANCED UNDERGRADUATE AND GRADUATE

501. ADVANCED THREE-DIMENSIONAL AERODYNAMICS (3-5 CREDIT HOURS TO BE ARRANGED). Pr., AE 304 and COI. Advanced concepts in the application of aerodynamic principles to finite wings and bodies, thickness effects, interference effects and computer simulation.
508. INTRODUCTION TO COMPUTATIONAL FLUID DYNAMICS (5). Pr., AE 304. An introduction to the application of modern numerical and computational techniques to problems arising in fluid dynamics. Emphasis will be placed on solving both practical problems and understanding the basic physical phenomenon involved.
514. HYPERSONIC AERODYNAMICS (3). Pr., AE 304. Introduction to hypersonic aerodynamics. Development of hypersonic methods such as shock-expansion waves, local surface inclination techniques and approximate theories. Applications to problems in hypersonic flow regime.

## *Aerospace Studies*

516. ROCKET PROPULSION I (3). Pr., AE 415. Detailed analysis of the thermodynamics, gasdynamics and design of liquid-propellant rockets.
517. ROCKET PROPULSION II (3). Pr., AE 415. Design and performance analysis of solid-propellant rocket motors with emphasis on internal ballistics.
520. DYNAMIC SIMULATION (3). Pr., AE 326. Computer techniques applied to the analysis of aerospace engineering problems using analog and hybrid computers and the digital problem-oriented language Advanced Continuous Simulation Language (ACSL).
521. FLIGHT VEHICLE STRESS ANALYSIS (3). Pr., AE 307. Stress analysis related to aircraft, missile and space structures.
522. AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS (3). Pr., AE 311, 409. Reinforcement and matrix materials, manufacturing techniques, laminated composite and structural joint design in aerospace structures.
528. SPACE PROPULSION SYSTEMS (5). Pr., AE 415. Introduction to reaction engines for use in outer space vehicles. Power requirements for space missions, nuclear power systems, ion engines, magnetohydrodynamics and plasma accelerators and photonic engines.
529. AIRCRAFT VIBRATION AND FLUTTER (4). Pr., AE 326, AE 409. Free, forced and damped vibration of single and multiple degree-of-freedom systems; introduction to vibration of continuous systems; introduction to flutter theory; applications in aerospace.
533. ASTRODYNAMICS II (3). Pr., AE 332. Elements of general perturbation theory; n-body formulation and introduction to 3-body problem; introduction to powered flight analysis and space flight guidance.
535. ELEMENTS OF V/STOL FLIGHT (3). Pr., AE 303 or COI. The analysis of methods for generating high lift at low vehicle forward speeds.
536. ROTARY WING AERODYNAMICS (3). Pr., AE 303. Aerodynamics and flight characteristics of the rotary wing aircraft.
541. DYNAMIC STABILITY AND CONTROL (3). Pr., AE 339. Derivation of the kinematic and dynamic equations used to describe the motions of aircraft. Analysis of the stability of steady state flight conditions. Response of aircraft to actuation of controls.
542. AUTOMATIC STABILITY AND CONTROL (3). Pr., AE 541. Principles and techniques of automatic control of aircraft and missiles. Effects on design variables.
543. FLIGHT SIMULATION (3). Pr., AE 541 and COI. Time domain simulation to the nonlinear six-degree-of-freedom motion of aircraft. Models for aerodynamics, propulsion and control systems. Special computer techniques applied to the generation of various flight profiles.
545. MISSILE AERODYNAMICS (3). Pr., AE 304. Aerodynamics of slender wing-body configurations for the low supersonic, moderate hypersonic and Newtonian continuum flow regimes. Linear and non-linear effects are considered as well as interference effects. Application to missile performance and stability for certain flight profiles.
580. ENGINEERING LAW AND ETHICS (3). Pr., senior standing. Addresses the role of law in the manufacture of a product, including legal issues of contracts, product liability, workers' safety and environmental control. Considers ethical issues which may confront designers and engineers.

## **Aerospace Studies (AF)**

- 101-102-103. THE AIR FORCE TODAY (1-1-1). LEC. 1, LAB. 1. The organization and mission of the United States Air Force through study of major commands. An introduction to strategic offensive and defensive forces, general purpose forces, aerospace support forces and the total force concept.
- 201-202-203. THE DEVELOPMENT OF AIR POWER (1-1-1). LEC. 1, LAB. 1. Air power from balloons and dirigibles through the jet age; a historical review of air power employment in military and non-military operations in support of national objectives; and a look at the evaluation of air power concepts, doctrine and technological change.
- 301-302-303. AIR FORCE MANAGEMENT AND LEADERSHIP (3-3-3). LEC. 3, LAB. 1. Practical applications of military briefings and writing; study of basic management functions, problem analysis, motivation, group dynamics and leadership to provide fundamental skills for junior officers entering the active duty Air Force. The courses include seminars, guest lecturers and experiential situations to develop officership.
- 401-402-403. NATIONAL SECURITY FORCES IN CONTEMPORARY AMERICAN SOCIETY (3-3-3). LEC. 3, LAB. 1. Focuses on Armed Forces as an instrument of national power and an integral element of society; emphasizes civilian-military relations and how U.S. defense policy is developed and implemented. Prepares students for transition to initial active duty.

## **Agricultural Economics and Rural Sociology (AEC) (RSY)**

Professors Johnson, *Head*, Adrian, Clonts, Dunkelberger, Evans, Hardy, Howze, J.E. Martin, N.R. Martin, Molnar, Strawn and Taylor-Alfa Eminent Scholar  
Associate Professors Bailey, Burton, Crews, Duffy, Fowler, Hatch, Jolly, Kinnucan, Novak, Prevatt, Simpson, Stallings and Young  
Assistant Professors Goodman, Nelson and Traxler  
Extension Economists Hurst and Williams

### **AGRICULTURAL ECONOMICS (AEC)**

- 200. **AGRICULTURAL ECONOMICS I (5).** Economic principles with emphasis on farm-related production, marketing, prices, consumption, taxation, credit, finance, public policies and tenure. Treats utilization of land, labor and capital. Credit not allowed in this course and EC 200.
- 202. **AGRICULTURAL ECONOMICS II (5).** Continuation of economic principles with emphasis toward microeconomic concepts relating to farm firm. Credit not allowed in this course and EC 202.
- 210. **MICROCOMPUTER APPLICATIONS IN AGRICULTURE (3).** LEC. 2, LAB. 2. Introduction of microcomputer technology to increase understanding of use of computer decision aids in agricultural careers; hardware including microprocessor, display, keyboard, data storage and retrieval, printer and communication options; software including languages, electronic spreadsheet, word processing, data-based management and programmed products; and interface with data source and processing systems.
- 301. **AGRICULTURAL MARKETING (4).** Pr., AEC 202 or equivalent. Principles and problems in marketing farm products. Analysis of marketing functions, services and costs; reducing costs and improving marketing efficiency. Marketing methods and distribution channels of major farm commodities. Market institutions and operation.
- 302. **FARM RECORDS AND TAX MANAGEMENT (3).** Types and uses of farm records and accounts with emphasis on analyzing records to improve net farm income. Interpretation of income tax regulations and preparation of farm tax returns with emphasis on tax management.
- 303. **AGRICULTURAL COOPERATIVES (3).** Principles and problems of organizing and operating farmers' cooperative buying and selling associations.
- 304. **AGRICULTURAL FINANCE (4).** Pr., AEC 202 and 210 or equivalents. Economic problems and policies in financing agriculture.
- 305. **FARM APPRAISAL (3).** Theory of land values; techniques on farm land and building appraisals for different purposes; relationships of land use, buildings, land titles, farm prices, taxes and interest rates to land values; evaluation of appraisal methods and forms currently in use.
- 307. **AGRICULTURAL LAW (4).** Legal environment of agriculture. Recognition of legal problems associated with property ownership, contracts, torts, financing, estate planning and environmental controls and restrictions.
- 399. **AGRICULTURAL BUSINESS AND ECONOMICS INTERNSHIP (1-4).** S-U ONLY. (MAY BE TAKEN FOR TOTAL OF 8 HRS.) Pr., COI. To provide practical job experience under joint supervision of an employer and the department. Internships may be taken in a variety of agricultural business firms and agencies including finance, farm supply, production, marketing and sales and government agencies. Training will prepare student for career employment.
- 490. **UNDERGRADUATE SEMINAR (1).** LEC. 1. Pr., junior standing. Pass-fail basis. Current developments in Agricultural Economics; the role of Agricultural Economics in the general economy.
- 499. **DIRECTED STUDIES IN AGRICULTURAL ECONOMICS (1-4).** Pr., COI, junior standing. Individualized work and study in consultation with faculty member on subject of mutual concern. May include directed readings, research, analysis of an employment experience or a combination. Employment experience with a variety of agribusinesses and agencies may serve as the focus.

### **ADVANCED UNDERGRADUATE AND GRADUATE**

- 501. **FARM MANAGEMENT (5).** Pr., AEC 202 and 210 or equivalents. Principles of economics applied to agriculture, uses of farm records to improve management of the farm; developing enterprise budgets and use in preparing a profit-maximizing farm plan.
- 503. **AGRICULTURAL PRICES (4).** Pr., AEC 202, MH 161 and MN 274, BST 215 or equivalent. Principles and factors in the pricing process with special reference to agricultural products and markets. Functions of prices and principles of supply and demand in price determination. Introduction to statistical estimation of price and demand relations.
- 505. **AGRICULTURAL POLICY (3).** Pr., AEC 202 or equivalent. Concepts, objectives and operation of public policies affecting agriculture. Development of agricultural policies in the United States.
- 509. **RESOURCE ECONOMICS (4).** Pr., AEC 202 and 210 or COI. Principal economic and institutional factors affecting man and his use of land. Supply, demand and future requirements for land. Property rights, land use planning, zoning, taxation and other social controls affecting land utilization.
- 510. **AGRICULTURAL BUSINESS MANAGEMENT (5).** Pr., AEC 202 or 210 or equivalents. Principles and problems in acquiring, organizing and operating successful agricultural businesses, capital requirements, factors affecting location and growth and measures of technical and economic efficiency in organization and operation; practices in buying, pricing and merchandising, management problems and policies in financing, personnel and public relations.



## *Agricultural Engineering*

512. **ECONOMIC ASPECTS OF WATER RESOURCES MANAGEMENT (4).** Supply, demand and use of water resources including economic, legal and political dimensions. Economics of management of water resource use and conservation in terms of present and future supplies and needs. Both public and private water resources will be considered.
530. **WORLD AND U.S. AGRICULTURAL TRADE (4).** Pr., AEC 200 or equivalent. Theory and significance of international trade, world distribution of agricultural production and trade, important issues and policies, documentation, mechanics and influence of exchange rates.

### **RURAL SOCIOLOGY (RSY)**

261. **INTRODUCTION TO RURAL SOCIOLOGY (4).** Basic sociological concepts and principles as applied to life in the rural community. Special attention given to the culture, social organization and social problems of rural people in the United States and in the South in particular. Credit not allowed in this course and SY 201.
362. **COMMUNITY ORGANIZATION (4).** General elective. Understanding the principles of community organization and effective citizenship. Survey of institutions, organizations and agencies interacting to meet community needs.
370. **METHODS OF SOCIAL RESEARCH (5).** Pr., RSY 261 or SY 201. Principal methods of data collection and analysis in sociological research.
371. **APPLIED RESEARCH METHODS AND PROGRAM EVALUATION (3).** Basic social science research techniques used in needs assessment studies and program evaluations. Fundamentals of social surveys, field experiments, demographic analyses and applications, principles and strategies of evaluation. Credit not allowed in this course and in RSY or SY 370.
490. **SENIOR SEMINAR (1).** Pr., senior standing, S-U grading only. Current developments in the social sciences as applied to agriculture and private/public agencies serving rural people.
498. **DIRECTED FIELD EXPERIENCE (5).** Structured involvement in an agency or organization serving rural counties and/or small communities under joint supervision of agency personnel and university faculty. Regular faculty-student conferences to discuss, evaluate and interpret experience.
499. **DIRECTED STUDIES IN RURAL SOCIOLOGY (1-5).** Pr., COI, junior standing. Individualized work and study in consultation with faculty member on subject of mutual concern. May include directed readings, research, analysis of an employment experience or a combination. May be used to complement and expand on an employment experience.

### **ADVANCED UNDERGRADUATE AND GRADUATE**

541. **EXTENSION PROGRAMS AND METHODS (5).** An in-depth consideration of extension orientation in adult and continuing education in U.S. and developing nations. The Cooperative Extension Service is analyzed as an educational institution. Fundamental steps in program development and evaluation.
561. **RURAL SOCIOLOGY (5).** Pr., RSY 261 or SY 201. Theories and conceptual approaches to rurality. Rural-urban differences in demographic composition; occupational structure; attitudes and values of rural people; regional cultures; and the role of agriculture, mining, forestry, fishing, manufacturing and service industries in rural life with attention to the nature of change.
562. **SOCIOLOGY OF COMMUNITY DEVELOPMENT (5).** Pr., RSY 261 or SY 201. Principles of applied social change at the community level in the U.S. citizen participation in community affairs, impacts of economic changes on small communities; role of networks, neighborhoods and local institutions in responding to community problems.
565. **SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (5).** Overview of changing attitudes and institutional responses to the use and exploitation of natural resources. Conservation, preservation and pollution control are treated as three primary sources of environmental concern. Global trends in population growth, energy availability and environmental degradation are examined.

### **Agricultural Engineering (AN)**

Professors Turnquist, *Head*, Curtis, Donald, Hill and Johnson  
Associate Professors Flood, Koon, Ogburn, Rochester Tyson and Yoo  
Assistant Professors Kutz, Taylor and Wilhoit  
Adjunct Professors Shafer and Taylor  
Adjunct Associate Professors Bailey and Burt  
Adjunct Assistant Professor Raper  
Extension Specialist Watson

### **COURSES FOR ENGINEERS**

101. **INTRODUCTION TO AGRICULTURAL AND FOREST ENGINEERING (1).** LEC. 1, LAB. 2. S-U graded. Winter. Perspectives on the agricultural and forest engineering profession. Creative design and the engineer's approach to problem solving. Introduction to the technical specialties of engineering for agriculture and forestry and career opportunities (same as FYE 101).
130. **INTRODUCTION TO ENGINEERING DESIGN FOR BIOLOGICAL SYSTEMS (1).** LAB. 3. Spring. A supervised engineering design project to design components and/or systems to solve a real problem in an agricultural or forestry related industry. Open only to students classified as 01 or 02. (Same as FYE 130).



## Agricultural Engineering

201. ENGINEERING PRINCIPLES IN BIOLOGICAL SYSTEMS (5). LEC. 4, LAB. 3. Pr., MH 161. Coreq., CSE 120. Fall. Engineering concepts and principles applied to agricultural and forest problems. Creativity and design. Unit operations of agricultural and forest engineering (same as FYE 201).
311. MOBILE EQUIPMENT DESIGN FUNDAMENTALS (4). LEC. 3, LAB. 3. Pr., EGR 301, 321, MH 265 and AN 201 or COI. Winter. Basic engineering analysis, synthesis and design concepts applied to mobile field equipment and machines for agricultural, forestry and industrial use. Includes engine performance, power transmission, traction mechanics, mechanics of machines and machine-operator interface and safety. (same as FYE 311).
313. LAND AND WATER CONSERVATION ENGINEERING (3). LEC. 2, LAB. 3. Pr., AN 315. Spring. Rainfall-runoff relationships. Soil erosion and its prediction and control. Hydraulic structures and open channel flow. (Same as FYE 313).
315. PROCESS ENGINEERING FOR BIOLOGICAL SYSTEMS (5). LEC. 4, LAB. 3. Pr., AN 201, CE 310, EGR 301. Winter. Design principles and equipment selection for crop, food and feed storage, preservation and manufacturing. Thermal processing, curing, drying, refrigeration, materials handling, pumps, fans and storage processes. (Same as FYE 315).
316. ELECTRICAL SYSTEMS IN AGRICULTURE (4). LEC. 3, LAB. 3. Pr., AN 201, EE 302, 303. Spring. Application of electrical power, equipment and control devices to agricultural systems. Special emphasis on safe and efficient power distribution, motor selection and performance and theory and performance of sensing and control devices.
317. ENVIRONMENTAL CONTROL FOR BIOLOGICAL SYSTEMS (3). LEC. 2, LAB. 3. Pr., AN 201, 315. Spring. Functional requirements and design of animal shelters, greenhouses and agricultural storage buildings. Emphasis on environmental control systems and energy management.
401. FOREST MACHINE DESIGN (3). LEC. 3. Pr., AN 311, EGR 207. Spring. Engineering analysis and design of forest machinery. Includes engineering characteristics of logs related to machine design, site preparation and planting equipment review, felling equipment design, loader kinematics, cable systems mechanics and machine reliability. (Same as FYE 401.)
402. FOREST TRANSPORTATION SYSTEMS DESIGN (3). LEC. 2, LAB. 3. Pr., FYE 304 and 313. Fall. Design of the forest transportation system including preconstruction planning, horizontal and vertical alignment, earthwork volume and distribution analysis and drainage control structures for the road network and specifications for the vehicles that will use the network. (Same as FYE 402.)
403. APPLIED STRUCTURAL ANALYSIS AND DESIGN (3). LEC. 2, LAB. 3. Pr., EGR 207. Fall. Analysis and design of structural systems of agriculture and forestry. (Same as FYE 403.)
414. IRRIGATION SYSTEM DESIGN (3). LEC. 2, LAB. 3. Pr., AN 313. Fall. Theory and design of irrigation systems. Emphasis on sprinkler and trickle systems, including solid set, traveler, center pivot and drip.
418. WASTE MANAGEMENT AND UTILIZATION SYSTEMS (4). LEC. 3, LAB. 3. Pr., AN 201, 313, 315, CH 104, 104L, BI 101. Fall. Theory and design of physical and biological treatment and processing systems for livestock waste management and utilization. The established technologies of lagoons and land application systems and the emerging technologies of energy production and refeeding are covered.
430. ENGINEERING DESIGN FOR BIOLOGICAL SYSTEMS I (4). LEC. 3, LAB. 3. Pr., AN 403, senior standing, COI. Winter. Design of equipment, structures and systems for food, feed, fiber, forest products and animal production and processing utilizing engineering principles. (Same as FYE 430.)
479. HONORS THESIS (1-6). Pr., COI and department head's approval.
490. SPECIAL TOPICS (2-5). (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as FYE 490.)

## COURSES FOR NON-ENGINEERS

250. WEATHER, CLIMATE AND AGRICULTURE (4). LEC. 3, LAB. 3. An introduction to the elements of atmospheric science and how they combine to create variations in world climate. The relation of climate and climatic variation to agriculture with emphasis on the available sources of climatic information.
350. SOIL AND WATER TECHNOLOGY (4). LEC. 3, LAB. 3. Fall. Technical application of soil and water resources management. Irrigation system planning and equipment selection.
351. AGRICULTURAL MACHINERY TECHNOLOGY (4). LEC. 3, LAB. 2. Fall and Spring. Agricultural machinery: utilization, management, selection and economic justification.
352. TRACTOR AND ENGINE TECHNOLOGY (4). LEC. 3, LAB. 2. Winter. Tractors and engines. Operation, fuels used, size selection, utilization and economic justification.
353. FARM BUILDINGS TECHNOLOGY (4). LEC. 3, LAB. 3. Winter. Selection of materials, methods of construction and functional needs of modern farm building.
354. AGRICULTURAL PROCESSING TECHNOLOGY (4). LEC. 3, LAB. 3. Agricultural processing systems: includes storing, drying, pelleting, mixing and automatic materials handling systems.
355. PRINCIPLES OF FOOD ENGINEERING TECHNOLOGY (5). LEC. 4, LAB. 3. Pr., MH 161, PS 205. Engineering concepts and unit operations used in processing and handling of food products.
356. LANDSCAPE AND GOLF COURSE IRRIGATION (4). LEC. 3, LAB. 3. Winter. Includes theory and design of landscape and golf course irrigation both sprinkle and trickle.
357. ENVIRONMENTAL QUALITY AND AGRICULTURE (4). LEC., 3, LAB. 3. Pr., CH 104. Basic introduction to pollution, measurement, nutrient cycles in nature, point and non-point source pollution, treatment and utilization of animal wastes and energy recovery from agricultural residues.

### ADVANCED UNDERGRADUATE AND GRADUATE

501. AGRICULTURAL POWER AND MACHINERY DESIGN (3). LEC. 2, LAB. 3. Pr., AN 311. Design of equipment and systems to apply engineering principles to solutions of agricultural power and machinery problems. Functional requirements, safety, reliability, service conditions, power measurement, useful life and creative design are combined to obtain designs for agricultural machine and power units.
503. SOIL AND WATER ENGINEERING II (3). LEC. 2, LAB. 3. Pr., AN 313 or COI. Theory and design considerations of selected topics in irrigation, erosion, non-point source pollution, drainage or upstream flood control.
505. ELECTRICAL AND PROCESSING SYSTEMS DESIGN (3). LEC. 3. Pr., AN 315, 316. Design and layout of material handling systems, fundamental theory of particle movement, study of sensing and feed-back systems to include automatic controls and servo-mechanisms.
507. AGRICULTURAL STRUCTURE DESIGN II (3). LEC. 3. Pr., AN 317, 403. Functional requirements and design of animal shelters and agricultural storage buildings.
509. HYDRAULIC CONTROL SYSTEMS (3). LEC. 2, LAB. 3. Pr., CE 310 or ME 340. Fall. Design and analysis of hydraulic systems. Application of sizing of hydraulic pumps, motors, valves and accessories for industrial and mobile systems. Laboratory emphasizes hands-on testing and functional analysis of components and systems, including measurement of pressure, flow and power. (Same as FYE 509.)
530. ENGINEERING DESIGN FOR BIOLOGICAL SYSTEMS II (4). LEC. 2, LAB. 6. Pr., AN/FYE 430 and COI. Spring. A supervised engineering design project to design components and/or systems to solve a real problem in an appropriate industry. Utilization of many engineering principles is required (same as FYE 530).
590. SPECIAL TOPICS. (CREDIT TO BE ARRANGED.) (2-5). Pr., COI. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as FYE 590.)
593. PRACTICUM (1-5). MAY NOT EXCEED 10 HOURS CREDIT. NOT OPEN TO MAJORS IN AGRICULTURAL ENGINEERING. Provides students with experience in Agricultural Engineering Technology closely relating theory and practice, usually carried on simultaneously.

### Agronomy and Soils (AY)

Professors Touchton, Head, Ball, Bransby, Burdett, Dane, Dickens, Evans,

Hajek, Hartzog, Henderson, Hiltbold, Hood, Johnson and Walker

Associate Professors Everest, Hairston, Mosjidis, Odom, Thurlow, Weaver and Wehltje

Assistant Professors Adams, Edmisten, Mask, Mitchell, Mullins

Patterson, Van Santen and Wood

Adjunct Professors Chien and Rogers

Adjunct Associate Professors Edwards, Reeves and Sikora

Adjunct Assistant Professors Bostick and Torbert

Extension Specialists Burmester and Delaney

200. CROP PRODUCTION (5). LEC. 4, LAB. 2. Fall, Winter. Production of crops used by man for food, feed and fiber including identification of crop plants, cultural practices and processing.
304. GENERAL SOILS (5). LEC. 4, LAB. 2. Pr., CH 105 and 105L or CH 207 or CH 203. Winter, Spring. The formation, classification, composition, properties, management, fertility and conservation of soils in relation to the growth of plants.
305. GENERAL SOILS (5). LEC. 4, LAB. 2. Pr., CH 103-104. Winter. The formation, classification, composition and properties of soils and their influence on vegetative growth and development on forest lands. Open only to students in Forestry.
307. GENERAL SOILS (5). LEC. 4, LAB. 2. Pr., CH 103-104. Fall, Spring. The general field of soils including genesis, classifications and fertility.
310. EARTH SCIENCE (5). Materials of the earth; forces that shape and sculpture the earth's surface, including weathering, water, soil formation and erosion; soil geography; and historical geology. (Not open to students in College of Agriculture and Agricultural Education. Credit toward degree may not be earned in both this course and a General Soils course.)
312. PRINCIPLES OF WEED SCIENCE (5). LEC. 4, LAB. 2. Pr., BI 102 and CH 104. Fall. Basic weed identification and biology, methods of weed management, and classification of herbicides and how they are used in weed control.
315. TURFGRASS MANAGEMENT (5). LEC. 4, LAB. 2. Pr., BI 102. Fall. The management of recreational and home area turfgrass will be studied and will include the establishment and maintenance of turf and the effect of light, traffic, soil fertility and water on its growth.
390. AGRONOMY AND SOILS INTERNSHIP (5). Pr., COI. S-U graded. To provide the student with practical experience under the supervision of an approved employer and the department. Internship may be in the areas of production, business, turf or science.
399. PROBLEMS IN WEED SCIENCE (1). LEC. 1. Pr., COI. Fall. Conferences, problems and assigned reading in weed science.
400. FIELD CROP PRODUCTION (5). LEC. 4, LAB. 2. Pr., junior standing. Winter, Spring, Summer. Production practices for peanuts, cotton, soybeans, corn, small grains and other field crops.
401. PRINCIPLES OF FORAGE PRODUCTION (5). LEC. 4, LAB. 2. Pr., junior standing. Fall and Spring. Grass and legume forage crops. The crops are considered from the standpoint of (a) pasture crops, (b) hay and silage crops, (c) soil improving crops.

- 420. SOIL JUDGING (3). LEC. 1 LAB. 4. Pr., AY 304, 305 or 307. Fall. Description, evaluation and interpretation of soil profile characteristics.
- 422. FACTORS LIMITING CROP PRODUCTION (3). LEC. 3. Winter. Factors influencing the production of crops including climate, water, soils. The role of plant and animal pests and the limitations created by the attitudes and mores of people.
- 490. SENIOR SEMINAR (1). LEC. 1. Pr., junior standing. Winter. S-U graded. Current developments and the role of crop and soil sciences.
- 499. SPECIAL PROBLEMS (1-5) (CREDIT TO BE ARRANGED.) Pr., departmental approval, junior standing. Not open to graduate students. Students will work under the direction of a staff member on special problems in crop, soil or weed science.

### ADVANCED UNDERGRADUATE AND GRADUATE

- 502. SOIL FERTILITY (5). LEC. 5. Pr., AY 304, 305 or 307. Winter. Lectures, demonstrations and problems illustrate principles of soil fertility as related to fertilizer practices and crop production. An advanced course, required of all students majoring in Agronomy and Soils. Either AY 502 or AY 507, but not both, may be used to satisfy the minimum requirement for the Master's degree.
- 506. FERTILIZERS AND SOIL TESTING (4). LEC. 4. Pr., AY 304, 305 or 307. Spring. Manufacture and properties of fertilizer materials; properties and formulation of fertilizer mixtures; relative efficiency of various plant nutrient sources; principles and methods of soil testing and plant tissue testing.
- 507. SOIL MANAGEMENT (5). LEC. 5. Pr., AY 304, 305 or 307. Summer. Physical, chemical and biological properties of soils and their management. An advanced course designed for students in Agricultural Education. Either AY 502 or AY 507, but not both, may be used to satisfy the minimum requirement for the Master's degree.
- 508. SOIL RESOURCES AND CONSERVATION (5). LEC. 4, LAB. 2. Pr., AY 304, 305 or 307. Fall. Soils as a natural resource for land-use planning; their classification and management for crop production, recreation and urban and industrial development.
- 509. SEED PRODUCTION (3). Pr., AY 201 or 401. Winter, odd years. Methods and factors affecting production, storage and processing seed.
- 510. METHODS OF PLANT BREEDING (5). LEC. 4, LAB. 2. Pr., ZY 300. Spring. Genetic principles related to crop improvement including modes of reproduction, qualitative vs. quantitative traits, role of environment and heritability. Study of breeding methods including pedigree selection, backcross and recurrent selection.
- 515. SOIL MORPHOLOGY (5). LEC. 4, LAB. 2. Pr., AY 304, 305 or 307. Spring. Physical, chemical and mineralogical properties of soils are studied in relation to their classification for engineering and agricultural uses.
- 516. ADVANCED TURFGRASS MANAGEMENT (5). Pr., AY 304, 315, BY 306. Fall, odd years. Factors affecting the grass plant as a component of a dynamic turf community. Influence of soil chemical and physical conditions, management practices and climate will be discussed. Both theoretical and practical aspects of turf cultural practices will be discussed along with design and construction of athletic turf areas.
- 517. CROP QUALITY (5) LEC. 5. Pr., AY 200 or 401. Spring. Quality of food, feed and fiber crops are regulated by genetic potentials, environment, management and utilization.
- 519. SOIL INTERPRETATIONS FOR PLANNING (5). Pr., COI. Characteristics that significantly affect soil response under various uses. (Not open to students in College of Agriculture or Agricultural Education.)
- 560. FERTILIZER DEVELOPMENT IN TROPICAL AND SUBTROPICAL AGRICULTURE (7). Pr., AY 506 or COI. Summer. Fertilizer production and properties; the management and marketing of fertilizer in a tropical or subtropical environment. Offered only at International Fertilizer Development Center at Muscle Shoals, AL.
- 593. PRACTICUM (1-5). (MAY BE REPEATED NOT TO EXCEED 10 HOURS CREDIT.) Not open to majors in Agronomy and Soils. Provides students with experience in Agronomy and Soils closely relating theory and practice, usually carried on simultaneously.

### Animal and Dairy Sciences (ADS)

Professors Marple, *Head*, Daron, Frobish, Harris, Huffman, Jones, Kuhlers,  
McCaskey, McGuire, Moss, Parks and Smith

Associate Professors Bartol, Coleman Cummins, Floyd, Gimenez,

Mulvaney, Owsley, Rahe, Ruffin, Schmidt and Van Dyke

Assistant Professors Blaylock, Chiba, Davenport, McCall, Payne and Rankins

Instructor Osborn

- 110. ORIENTATION TO ANIMAL AND DAIRY SCIENCE (1). LEC. 1. Fall. An introduction to the departmental programs and personnel. Job opportunities for the individual trained in Animal Science.
- 200. INTRODUCTORY ANIMAL & DAIRY SCIENCES (5). LEC. 4, LAB. 2. Fall, Spring. The importance of livestock to agriculture and to the nutrition of people. Livestock terminology, selection, reproduction, nutrition, management, marketing and species characteristics of beef cattle, swine, sheep and horses.
- 202. PRACTICAL LIVESTOCK MANAGEMENT TECHNIQUES. (2) LAB. 4. Pr., ADS 200. Fall, Winter, Spring. May be repeated for a maximum of four credits. Demonstration and practice of skills associated with animal care and management. Animal behavior patterns will be discussed and observed.
- 205. LIVESTOCK PROMOTION AND MERCHANDISING (2). LAB. 6. Pr., ADS 200. Fall. Showing, fitting, public display, sales management and advertising as it relates to the promotion and merchandising of cattle, swine, sheep and horses.

206. INTRODUCTION TO HORSE MANAGEMENT AND TRAINING (3). LEC. 1, LAB. 4. Fall. An introduction to the management, training and enjoyment of horses.
210. COMPANION ANIMAL MANAGEMENT (2). LEC. 2. Winter. Practical aspects of behavior, nutrition, breeding, reproduction, health, economics and management of dogs, cats and other animals generally considered to be human companions.
260. GROWTH AND BODY COMPOSITION (4). LEC. 2, LAB. 4. Winter. Prenatal and postnatal growth of muscle, fat and bone of meat animals; the evaluation of body composition, quality and yield grading; the pricing of live animals and their carcasses.
270. COMMERCIAL MEAT MANAGEMENT (5). LEC. 4, LAB. 2. Spring. The importance of meat in the food service industry, including food safety, purchasing, cooking and meat in the diet. (Credit in ADS 370 precludes credit in ADS 270).
315. HERD HEALTH MANAGEMENT (5). Pr., MB 300 and ZY 316 or equivalent. Spring. Prevention and control of the major diseases of farm animals and development of herd health programs.
321. ANIMAL BIOCHEMISTRY AND NUTRITION (5). LEC. 5. Pr., CH 104, 203 or equivalent, BI 103. Fall, Winter. Principles of animal nutrition and biochemistry and a study of nutrients and their utilization by animals.
322. FEEDS AND FEEDING (4). LEC. 3, LAB. 2. Pr., ADS 321 or COI. Winter, Spring. Characteristics of feedstuffs and general comments about their processing. Principles and practices of balancing and compounding of rations for beef and dairy cattle, horses, sheep, swine and pets.
330. INTRODUCTORY LIVESTOCK EVALUATION AND MARKETING (3). LAB. 6. Pr., ADS 260. Winter. A comprehensive study of live animal and carcass evaluation techniques used in selection and marketing of beef cattle, swine and sheep. The development of oral communication skills will be emphasized.
331. INTRODUCTORY MEAT SELECTION AND GRADING (3). LAB. 6. Pr., ADS 260. Winter. The development of grading standards and application of federal grades to lamb, pork and beef carcasses, comparative evaluation of carcasses and wholesale cuts. Some labs in nearby processing plants.
333. DAIRY CATTLE JUDGING (3). LAB. 6. Pr., ADS 200. Spring. Theory and practice in the selection of dairy cattle.
350. ANIMAL BREEDING (4). LEC. 3, LAB. 2. Pr., ZY 300. Fall. Application of population genetics to the improvement of cattle, sheep and swine. Studies of different systems of selection and mating and their related efficiencies for livestock improvement.
351. LIVESTOCK SELECTION (4). LEC. 2, LAB. 4. Pr., ADS 350. Spring. Theory and practice in the use of applied genetics principles, performance records and visual appraisal in the selection and breeding of beef cattle, dairy cattle and swine.
361. REPRODUCTIVE PHYSIOLOGY (5). LEC. 4, LAB. 2. Pr., ZY 316. Winter. Comparative anatomy, physiology and endocrinology of animal reproduction and lactation; techniques involved in the artificial insemination and pregnancy testing of farm animals. Applications of these principles to improving the efficiency of livestock.
362. ARTIFICIAL INSEMINATION OF FARM ANIMALS (2). Spring. Techniques involved in artificial insemination and pregnancy testing of farm animals. Application of these techniques to reproductive systems of livestock.
370. MEAT SCIENCE (4). LEC. 3, LAB. 2. Pr., ADS 260 or COI. Spring. Fundamentals of slaughter, processing, storage and merchandising of meat and meat products. Biochemical and physiological implications of nutrition, breeding and antemortem treatment on meat quality, curing and processing.
380. UNDERGRADUATE SEMINAR (1). Pr., junior standing. Spring. Lectures and discussions on job opportunities by staff and guests.
401. BEEF PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 260, 322, 350, 361 or COI for non-majors only. Winter. To provide an overview of the beef cattle industry. To develop modern concepts, ideas and methodology associated with the application of technology to the solution of problems related to reproduction, breeding, nutrition, management and use of facilities in a modern beef cattle enterprise.
403. DAIRY CATTLE PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 260, 322, 350, 361 or COI for non-majors only. Fall. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient dairy production.
405. HORSE PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 260, 322, 350, 361 or COI for non-majors only. Spring. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient horse production.
407. SWINE PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 260, 322, 350, 361 or COI for non-majors only. Fall. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient swine production.
409. SHEEP PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 260, 322, 350, 361 or COI for non-majors only. Winter. Application and integration of breeding and selection, nutrition, reproduction, health and marketing to achieve optimum lamb and wool production.
410. BEHAVIOR OF FARM ANIMALS (4). LEC. 3, LAB. 2. Pr., ADS 361 or COI. Spring. Basic information on behavior, its purpose and how it is measured will be followed by an examination of eating, locomotive, sexual, aggressive, territorial, maternal and resting behaviors in pigs, sheep, cattle and horses.
430. ADVANCED LIVESTOCK JUDGING (2). LAB. 6. Pr., ADS 330 or COI. Spring, Fall. May be repeated for a maximum of four hours credit. An advanced course in the principles and techniques of grading and selecting livestock based on visual criteria plus performance information.
431. ADVANCED MEAT JUDGING (2). LAB. 6. Pr., ADS 331 or COI. Spring, Fall. May be repeated for a maximum of four hours credit. Practice in evaluation and grading of beef, pork and lamb carcasses and cuts. Development of communication skills and exposure to animal agriculture through training in local meat packing plants and intercollegiate competition.

## Architecture

432. **ADVANCED ANIMAL EVALUATION AND MARKETING** (2). LAB. 4. Pr., ADS 430 or 431 or COI. Winter, Spring. May be repeated for a maximum of four hours credit. A comprehensive study of live slaughter animal and carcass evaluation techniques used in marketing cattle, sheep and swine.
433. **ADVANCED DAIRY CATTLE JUDGING** (3) LAB. 6. Pr., ADS 333 or COI. Fall. Advanced course in the selection of dairy cattle.
470. **MEAT PROCESSING** (4). LEC 3, LAB. 3. Pr., ADS 370. Fall. Principles of meat processing; portion control, restructured meat technology, curing reactions and sausage processing. Physical, sensory and biochemical properties of processed meat.
477. **HONORS THESIS** (3-6 Credits). Repeatable once for a maximum of six hours credit.
490. **SPECIAL PROBLEMS** (1-5). (CREDIT TO BE ARRANGED.) Pr., departmental approval, senior standing. Fall, Winter, Spring, Summer. Not open to graduate students. Students will work under the direction of staff members on specific problems.
495. **INTERNSHIP IN ANIMAL AND DAIRY SCIENCES** (5-15). Pr., COI. S-U only. Fall, Winter, Spring, Summer.

### ADVANCED UNDERGRADUATE AND GRADUATE

507. **ADVANCED SWINE MANAGEMENT** (5). LEC. 3, LAB. 4. Pr., ADS 407, junior standing, COI. Spring. Advanced course in management techniques, facility design and operation of modern swine production systems.
508. **ADVANCED BEEF PRODUCTION** (5). LEC. 4, LAB. 2. Pr., ADS 260, 320, 401. Knowledge of ADS 520 and AEC 210 helpful. Spring, alternate years. Practical application and integration of nutrition, herd health, purchasing, marketing, economics and management of beef cattle in stocker and feedlot enterprises. Labs include animal handling, feedlot management techniques and use of computers for decision-making and program analysis.
520. **ADVANCED ANIMAL NUTRITION** (5). LEC. 4, LAB. 2. Pr., ADS 322, CH 207. Fall. Nutrition of farm animals; the integration of animal physiology and nutrient metabolism with applied feeding practices used in animal production; discussion of recent nutritional developments.
565. **PHYSIOLOGY OF LACTATION** (3). LEC. 3. Pr., ADS 220 and ZY 316. Fall. The mammary gland, its structure and functions including uptake of precursors and the synthesis and secretion of milk.
593. **PRACTICUM** (1-5). (MAY BE REPEATED NOT TO EXCEED 10 HOURS CREDIT.) Not open to majors in Animal and Dairy Sciences. Provides students with experiences that closely relate theory and practice.

## Architecture (AR)

Professors Bennett, Head, Davis, Doerstling, Faust, Gwin, Parker and Ruth  
Associate Professors Braly, Buege, Cook, Finn, Orgen and Zorr  
Visiting Associate Professor Setzer  
Assistant Professors Burleson, Nakhjavan, Pratt and Silberberg  
Visiting Instructors Fisher, Keown, McAlpine and Peek

### ARCHITECTURE PROGRAM (AR)

100. **INTRODUCTION TO CAREERS IN DESIGN AND CONSTRUCTION** (1 or 3). Issues involved in the environmental design and construction professions and the nature of commitment to curricula in this field. Open to all students. Graded S-U.
101. **ANALYSIS AND COMPOSITION** (5) LEC. 2, STUDIO 8. Pr., acceptance into AR, ID or LA curriculum. Observing and understanding natural and built environments. Introduction to fundamental principles, methods and media of design.
102. **SYNTHESIS AND REPRESENTATION** (5). LEC. 2, STUDIO 8. Pr., AR 101. The conception and representation of ideas and the invention of form, with an emphasis on understanding materials.
103. **ARCHITECTONICS** (5). LEC. 2, STUDIO 8. Pr., AR 102. The detail and the fragment as basic components of, and analogues for, inventions in natural and built environments.
- 201-202-203. **ARCHITECTURAL DESIGN** (5-5-5) LEC. 2-2-2, STUDIO. 10-10-10. Pr., AR 103, MH 161, EH 103. Man and his needs are examined as the primary influences on the making of interior and exterior space, architectural form and physical function. Lectures emphasize architectural methodology, contextualism and structure parallel studio projects.
221. **COMPUTERS IN ARCHITECTURE** (3). Pr., CSE 100 or COI and AR 103 or IND 112. Introductory survey of existing and emerging techniques of computer utilization in architectural design, production and management.
230. **MATERIALS AND METHODS OF CONSTRUCTION** (3). Pr., AR 103. Introduction to materials and methods of construction and their integration in basic building types. Emphasis on wood and masonry.
231. **SYSTEMS AND CONSTRUCTION TECHNOLOGY** (3). Pr., AR 230. Advanced materials and methods of construction with emphasis on steel and concrete.
- 261-262-263. **HISTORY AND THEORY OF ARCHITECTURE** (3-3-3). Pr., AR 103 or COI. The development of architecture from ancient times through contemporary examples. The cultural and social milieu, as well as the technology of each period will be investigated to better understand the basic determinants of architectural form. Composition of architectural space will be considered. Illustrated lectures, readings, drawings and reports.
- 301-302-303. **ARCHITECTURAL DESIGN** (5-5-5). LEC. 2-2-2, STUDIO. 15-15-15. Pr., AR 203, 261, 262, 263, PS 207. Theoretical, cultural and environmental issues are posed for consideration in the analysis of architectural design problems of moderate complexity. Lectures emphasize the relationship between conceptual aspects of architectural form and technical systems of building parallel studio projects. Enrollment is limited in third year sequence as determined by the Department of Architecture.



320. PHOTOGRAPHY I (3). Pr., Open to AR, BSC, ID, IND & LA only. COI. An exploration of the 35MM SLR camera in black and white photography for personal expression and as a tool for design.
321. PHOTOGRAPHY II (3). Pr., AR 320, COI. Development of individual photographic skills and insights into understanding of surroundings.
330. ENVIRONMENTAL CONTROL I (3). Pr., AR 203. Effects of climate, materials and systems as a component of the design and construction process. Projects, exams, papers.
331. ENVIRONMENTAL CONTROL II (3). Pr., AR 330. Principles of lighting, electrical and plumbing systems as a component of the design and construction process. Projects, exams, papers.
350. 20TH CENTURY ARCHITECTURE (3). Pr., AR 261, 262, 263. Philosophical and theoretical architectural concerns of the 20th century. Classroom format, readings, lectures, discussions and written reports.
360. APPRECIATION OF ARCHITECTURE (3). General elective. Pr., 2nd year standing. (Not open to AR, ID and LA students.) Architectural development with particular attention to American and contemporary examples. Illustrated lectures, reading, essays.
374. HISTORY AND THEORY OF URBAN FORM (3). Pr., AR 301. Introduction to urban form, determinants and urban design theories.
401. ARCHITECTURAL DESIGN (6). LEC. 2. STUDIO. 15. Pr., AR 303. Architecture and the urban condition is the primary theme in the design of buildings and spaces. Lectures emphasize urban issues, research methods, analysis and programming parallel studio projects of increasing complexity.
402. ARCHITECTURAL DESIGN (6). LEC. 2. STUDIO. 15. Pr., AR 401, BSC 315, 353. Primary emphasis is on architectural design at a community scale. Lectures are conceived to facilitate the application of principles, techniques and research methods introduced in the prerequisite planning courses.
403. ARCHITECTURAL DESIGN (6). LEC. 2. STUDIO. 15. Pr., AR 402. Consideration given to architectural problems of advanced complexity, having significant impact on the urban environment. Lectures focus on contextual analysis, zoning, codes and programming.
430. FIELD PRACTICE (3). Pr., AR 303 and COI. Students may obtain academic credit for participation in learning experiences of a practical nature outside the normal curricular offerings of the University. S-U graded.
435. DESSEIN d' ARCHITECTURE (3). Pr., 3rd year standing. Explorations in the art of representation. Complete descriptions of specific courses and their prerequisites are available from the department. Students are required to take two of the various courses offered.
469. LIGHTING (3). LEC. 1, LAB 2. Pr., 3rd year standing. An introduction to lighting, principles and techniques as applied to design in architecture and interior design.
495. SPECIAL PROBLEMS. (CREDIT TO BE ARRANGED UP TO 5 HRS.) Pr., 3rd year standing. Development of an area of special interest through independent study. May be a group or team effort under direction of the faculty and with prior approval of the head of the department. Evaluation of the work may be by faculty jury. May be taken more than one quarter. Maximum credit of 15 hours.
- 501-502. ARCHITECTURAL DESIGN (6-6). LEC. 2. STUDIO. 15-15. Pr., AR 403, EH 402. A synthesis of the previous design experiences is stressed through advanced theoretical and problem-solving processes. Lectures and discussions on architectural expression and professional concerns parallel studio projects emphasizing detailing as well as overall building design.
503. ARCHITECTURAL THESIS (8). LEC. 2. STUDIO. 16. Pr. AR 502, 599. Thorough development of an architectural position is explored through a design problem of the student's own choosing, under the direction of the Thesis Committee and advisor(s). Lectures and discussions are designed to parallel student's work in the preparation of architectural drawings, models, details and a written text.
551. SEMINARS IN METHODS AND PROCESS (3). Explorations of the tools and techniques available to the design professional. Complete descriptions of specific seminars available from the department.
552. SEMINARS IN CONTEMPORARY ISSUES (3). Investigation of significant topics and issues that present opportunities and constraints to architectural thought and practice. Complete descriptions of specific seminars available from the department.
553. SEMINARS IN INTERDISCIPLINARY STUDIES (3). Various disciplines that impinge upon the design of buildings, including natural and social sciences, technology and humanistic studies. Complete descriptions of specific seminars available from the department.
556. SEMINARS IN HISTORICAL PERSPECTIVES (3). Theories, schools or periods with the intent of expanding awareness of critical attitudes toward both the potentials and limitations of architecture. Focus of individual seminars will range from ancient to post-modern architecture. Complete descriptions of specific seminars available from the department.
557. SEMINARS IN ASPECTS OF DESIGN (3). Detailed aspects of architectural design, such as form, space, style, meaning, imagery or cultural context, with the intent of developing theoretical and analytical habits of thought. Complete descriptions of specific seminars available from the department.
558. SEMINARS IN DISCIPLINES OF ENVIRONMENTAL DESIGN (3). Related design fields to broaden appreciation of the range of concerns of the design professional. Complete descriptions of specific seminars available from the department.
- 571-572. PROFESSIONAL PRACTICE (3-3). Pr., 4th year standing. Procedure in architectural practice; construction methods, estimation of quantities and costs. Office organization; legal requirements; professional organizations and relations; civic responsibility, professional ethics.
575. URBAN DESIGN METHODS AND PROCESSES (3). Pr., AR 374. Techniques and methodologies in urban design problem solving and strategies for implementation.



## Architecture

597. INTRODUCTION TO RESEARCH (1). Pr., AR 403. Introduction to architectural research including the selection of a thesis and thesis project and the initial development of a thesis paper.
598. THESIS RESEARCH (WR) (4). Pr., AR 597. Coreq., AR 502. The development of a comprehensive architectural thesis and research paper including thesis discussion, programming site information and case studies.
599. THESIS RESEARCH (1). Pr., AR 598. Coreq., AR 503. The finalization and resolution of the issues investigated in AR 502, 503 and 598 (WR).

### INTERIOR DESIGN (ID)

Professor Blackwell

Associate Professor Schumacher, *Program Chair*

Assistant Professor Prange

Visiting Instructor Epperson

215. ELEMENTS OF INTERIOR DESIGN (3). Pr., AR 103. The profession of interior design including basic theory of interior design principles, aesthetics and design concepts. Lectures, reading and discussions.
216. ELEMENTS OF INTERIOR DESIGN (3). Pr., AR 103. Graphic drawing of interior spaces and related architectural design solutions to develop.
217. ELEMENTS OF INTERIOR DESIGN (3). Pr., AR 103. Basic drafting techniques and skills in relation to development of architectural working drawings required in the construction of interior spaces and equipment.
- 305-306-307. INTERIOR DESIGN (6-6-6). LEC. 2-2-2, STUDIO 15-15-15. Pr., AR 203. Admission upon recommendation of the Committee on Design. Analysis and solution of interiors of moderate complexity, with emphasis on domestic and commercial problems. Research, discussion, drawings, models.
- 365-366. HISTORY AND THEORY OF INTERIOR DESIGN (3-3). Pr., AR 261, 262, 263. The development of interior spaces, furniture, fabrics and accessories from pre-Renaissance to 1900. Illustrated lectures, readings, reports and field trips.
367. 20TH CENTURY INTERIOR DESIGN (WR) (3). Pr., AR 350. The fundamental aspects of interior design, spatial order and characteristics, furniture and fabric design from 1900 to date. Illustrated lecture, readings, reports.
- 405-406. INTERIOR DESIGN (6-6). LEC. 2-2, STUDIO. 12-12. Pr., ID 307. Admission upon recommendation of the Committee on Design. Analysis and solution of interiors of advanced complexity, with emphasis on institutional and public problems. Research, discussions, drawings, models.
407. INTERIOR DESIGN THESIS (7). LEC. 2, STUDIO 15. Pr., ID 406. The development of a major design problem under the direction of the Committee on Design. Drawings, models, details; oral presentation for jury consideration.
408. INTERIOR DESIGN RESEARCH (WR) (2). LEC. 1, STUDIO 3. Coreq., ID 406. Selection and comprehensive programming of a terminal interior design problem to be executed in ID 407.
- 441-442-443. PROFESSIONAL PRACTICE (3-3-3). LEC. 1-1-1, STUDIO 3-3-3. Office procedure and methods for interior designers; the techniques and execution of working drawings for buildings, cabinetry and interior details; specification. Discussions, drawings, inspections, reports.
495. SPECIAL PROBLEMS. (CREDIT TO BE ARRANGED TO 5 HRS.) Pr., 3rd year standing. Development of an area of special interest through independent study. May be a group or team effort under direction of the faculty and with prior approval of the department head. Evaluation of the work will be by faculty jury. May be taken more than one quarter. Maximum credit: 15 hours.

### LANDSCAPE ARCHITECTURE (LA)

Associate Professor Henderson, *Program Chair*

Assistant Professors Campbell, LaHaie and Weaver

- 261-262. HISTORY OF LANDSCAPE ARCHITECTURE I-II (3-3). Historical analysis of man's progress in designing land and outdoor space from ancient times to the present.
- 301-302-303. BASIC LANDSCAPE ARCHITECTURAL DESIGN (5-5-5). LEC. 2-2-2, STUDIO 10-10-10. Pr., AR 203, HF 222, 223, 231. Coreq., BSC 324. Third-year design studio, emphasizing research, planning and design problems at neighborhood to community scales.
- 341-342-343. LANDSCAPE ARCHITECTURAL CONSTRUCTION I-II-III (5-5-5). Pr., MH 160, 3rd year standing. Third-year sequence in principles, techniques and methodologies of site grading, drainage, materials, construction and systems design.
363. COMPUTERS IN LANDSCAPE ARCHITECTURE (3). Pr., CSE 100 or COI. Introduces students to basic applications of computers to the Landscape Architectural profession. Emphasis on Autocadd and Landscape software.
- 401-402-403. INTERMEDIATE LANDSCAPE ARCHITECTURAL DESIGN (5-5-5). LEC. 2-2-2, STUDIO 10-10-10. Pr., LA 303, 343. Fourth-year design studio emphasizing research, planning and design problems at community to urban scale.
431. PLANTING DESIGN (5). Pr., HF 222, 223, 321, LA 301. A continuation of planting design incorporated in landscape design courses; emphasis on specific problems in respect to knowledge of plant characteristics and requirements in natural and man-made environments; preparation of planting plans and specifications.
455. SELECTED TOPICS IN LANDSCAPE ARCHITECTURE (3). Pr., 4th year standing. A special experimental seminar or independent study course intended to cover topics not treated by regular course offerings.
495. SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURE (3). Pr., 3rd year standing. Development on a tutorial basis of an area of special interest through independent study. Maximum credit of six hours.

## Art

501. ADVANCED LANDSCAPE ARCHITECTURAL DESIGN (5). LEC. 2, STUDIO 10. Pr., AR 403. Studio emphasizing research, planning and design problems at regional scale.
- 591-592. THESIS RESEARCH I-II (3-3). Pr., LA 485. Two-quarter sequence in research methods and their application to the fifth-year thesis project.
- 593-594. LANDSCAPE ARCHITECTURAL STUDIO I-II (6-6). LEC. 2-2, STUDIO 12-12. Pr., LA 501, 591. Coreq., LA 592. Two-quarter thesis project which constitutes a comprehensive final project for the professional degree of Bachelor of Landscape Architecture.

## COMMUNITY PLANNING

Professor Meyer, *Director*, and Bennett  
Associate Professor Setzer  
Visiting Lecturer Juster

### ADVANCED UNDERGRADUATE AND GRADUATE

501. URBAN PLANNING AND DESIGN (5). Examination of urban planning and design that shapes the three-dimensional form, character, growth, development and revitalization of cities, with primary focus on the role of planners and urban designers within the complex processes that shape cities and urban regions.
521. MICROCOMPUTERS IN PLANNING (3). Microcomputer applications in planning, including data base management, spreadsheets, computer-aided mapping and geographic information systems.
522. PLANNING AND ENVIRONMENTAL PERCEPTION (3). Pr., COI. Analysis of human perception of the cultural, social and natural environments; the impacts of landscape alteration and their mitigation.
524. REAL ESTATE DEVELOPMENT (5). Pr., COI. Survey and analysis of the financial, legal, administrative, planning and design factors influencing the process of real estate development from the perspectives of developers, planners and consumers.
525. HISTORIC PRESERVATION PLANNING (5). Pr., COI. Planning for the preservation, restoration, conservation and adaptive reuse of historic buildings and sites within the comprehensive planning process.
527. DOWNTOWN REVITALIZATION (5). Pr., COI. Goals, principles, strategies and programs for restoring and revitalizing downtown areas with particular emphasis on physical building and reuse activities and their relationships to fiscal, administrative and private sector organization.
535. CURRENT PLANNING ISSUES (3). Pr., COI. Seminar examining topical issues in the fields of urban and regional planning.
541. PRESERVATION RESEARCH AND DOCUMENTATION (5). Research and documentation for production of field measured drawings of historic structures to standards of the Historic American Buildings Survey.
545. RURAL AND COMMUNITY PLANNING (3). Pr., COI. The nature of rural areas and communities, the perspective, responsibility and performance of the planning professional and a critical appraisal of regional and community plans.
564. SITE PLANNING (5). Pr., COI. Introduction to the art of site planning, an exposition of its principles and application of its techniques with both large and small scale projects.
576. HISTORY AND THEORY OF URBAN DESIGN (3). Physical development of cities and the forces that design, shape, build and redevelop them.

## Art (AT)

Professors Gluhman, *Head*, Dugas, Hartsfield, Hatfield, Olson  
Ross, Taugner and Williams  
Associate Professors Furr, La Roux, Markle, Morgan, Munday, Price and Wagoner  
Assistant Professors Braden, Comstock, Fleming, Graham, Heck,  
Lewis, Mitchell and Simpson

All studio courses require eight hours contact with instructor and four hours independent work.

101. DRAWING I (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Basic principles of freehand drawing.
102. STUDIO ART I (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Introduction to and practice in the application of the plastic elements, color, form, line, texture, space, etc. Emphasis on two-dimensional organization.
103. CERAMICS (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Pr., AT 102. Introduction to principles of sculpture and three-dimensional design using clay as a medium. Exercises in construction, modeling, casting and wheel throwing.
104. BEGINNING PAINTING (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Water-based painting media and picture structure; exercise in still-life and landscape painting.
105. DRAWING II (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Pr., AT 101. Directed exploration and investigation of the elements of drawing through exercise/assignments involving the figure, still-life, objects from nature and interior and exterior environments.
111. FUNDAMENTALS (4). STUDIO 12. Mechanical and free-hand linear perspective.
112. FUNDAMENTALS (4). STUDIO 12. Representational drawing. Emphasis on accurate observation, pictorial organization and mastery of tone value.

113. FUNDAMENTALS (4). STUDIO 12. Pr., AT 111, 112. Interpretive drawing. Emphasis on concept, content, creativity, pictorial organization and color.
121. FUNDAMENTALS (4). STUDIO 12. Elements and principles of basic design. Emphasis on two-dimensional composition, color theory and craftsmanship.
122. FUNDAMENTALS (4). STUDIO 12. Basic three-dimensional organization. Exploration of various media.
123. FUNDAMENTALS (4). STUDIO 12. Pr., AT 121, 122. Advanced application of principles encountered in AT 121 and 122. Emphasis on concept development.
171. HISTORY OF ART I (3). LEC. 3. A survey of painting, sculpture and architecture from Paleolithic through early Medieval times.
172. HISTORY OF ART II (3). LEC. 3. A survey of painting, sculpture and architecture from Romanesque through Baroque periods.
173. HISTORY OF ART III (3). LEC. 3. A survey of painting, sculpture and architecture from the Rococo period to recent times.
211. BASIC FIGURE DRAWING (4). STUDIO 12. Pr., AT 113, 121, 122, 171, 172, 173. Open to VAT majors only. Drawing in various media emphasizing the human figure as form and as a compositional element. Measuring and sighting for proportion will be introduced. Requires drawing from live nude models.
212. FIGURE CONSTRUCTION (4). STUDIO 12. Pr., AT 113, 121, 122, 171, 172, 173. Open to VAT majors only. Lectures deal with form, function and operation of skeletal and muscular parts of the body. Drawing from casts, skeleton and from the live nude model.
213. FIGURE DRAWING (4). STUDIO 12. Pr., AT 123, 211, 212. Open to VAT majors only. Drawing from the model in various media, with emphasis on interpretation, expression and composition. Requires drawing from live nude models.
- 214-215-216. DRAWING (4-4-4) STUDIO 12. Pr., AT 213 and taken in sequence. Open to VAT majors only. Drawing process as a means of creating finished works. Emphasis on concept development and creativity. Various media. Live nude models may be used on occasion.
221. GRAPHIC PROCESSES (4). STUDIO 12. Pr., AT 111, 112, 123, 171, 172, 173. Open to VAT majors only. Graphic reproduction processes, preparation of art copy for reproduction, copy fitting, paper, related subjects.
222. DESIGN SYSTEMS (4). STUDIO 12. Pr., AT 111, 112, 123, 171, 172, 173. Design procedures for creative problem solving in areas of visual organization; emphasis on presentation and visualization of concepts.
223. GRAPHIC FORMATS (4). STUDIO 12. Pr., AT 113, 221. Applied problems in editorial and advertising layout. Emphasis on relationship of format to media.
- 231-331. OIL PAINTING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 232-332. WATER COLOR (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 233-333. ACRYLIC PAINTING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 241-341. RELIEF PRINTMAKING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 242-342. INTAGLIO PRINTMAKING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 243-343. LITHOGRAPHY (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 251-351. CLAY SCULPTURE (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 252-352. WOOD SCULPTURE (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 253-353. STONE SCULPTURE (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
301. ELEMENTARY SCHOOL ART (4). LEC. 2, LAB. 6. Pr., junior standing. Cannot be taken for credit by VAT majors. An introduction to design principles and elements. The theory of teaching art, methods and materials especially related to elementary school art.
321. PHOTODESIGN (4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173. Open to VAT majors only. Technical aspects of equipment, materials and processing. Emphasis on aesthetic analysis. Historical development of photography as related to visual communications. Some special expense required.
322. PHOTOCOMMUNICATION (4). STUDIO 12. Pr., AT 221, 321. Photography as applied communication. Emphasis on advanced technical and studio techniques.
323. TYPOGRAPHICS (4). STUDIO 12. Pr., AT 221. Practical applications of typography in advertising, editorial and other contemporary formats. Historical and anatomical development of type and letter forms.
370. ART OF THE UNITED STATES (3). LEC. 3. Pr. sophomore standing. Architecture, painting and sculpture from colonial to recent times.
371. ANCIENT ART (3). LEC. 3. Pr., sophomore standing. The arts of Mesopotamia and Egypt, of Aegean cultures and of Greece and Rome.
372. MEDIEVAL ART (3). LEC. 3. Pr., sophomore standing. Carolingian, Ottonian, Romanesque and Gothic art and architecture.
373. RENAISSANCE ART (3). LEC. 3. Pr., sophomore standing. 15th and 16th century art and architecture with emphasis on Italy.
374. BAROQUE AND ROCOCO ART (3). LEC. 3. Pr., sophomore standing. 17th and 18th century European painting, sculpture and architecture.
375. 19TH CENTURY ART (3). LEC. 3. Pr., sophomore standing. Major art movements from Neo-Classicism to Post-Impressionism and Art Nouveau.
376. 20TH CENTURY ART (3). LEC. 3. Pr., sophomore standing. Major art movements from 1900 to more recent times.

377. PRE-COLUMBIAN ART (3). LEC. 3. Pr., sophomore standing. The arts of Mexican, Yucatan and Andean cultures before 1519.
378. EARLY NETHERLANDISH PAINTING (3). LEC. 3. Pr., sophomore standing. Covers the 14th to 16th centuries, from the Van Eycks and Van der Weyden to Van Leyden.
379. THE ARTS OF JAPAN (3). LEC. 3. Pr., sophomore standing. Key monuments, influences and personalities from Jomon through Edo periods.
399. VISUAL ARTS INTERNSHIP (5). Pr., successful completion of all 200-level course requirements in student's major area. A period of seven weeks working full-time as a regular staff member with an approved internship sponsor under the direction of a supervising art director. Credit given as an art elective. Cannot be repeated for credit.
- 424-425-426. VISUAL DESIGN I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 222, 223, completion of 18 hours of art history and junior standing. Open to VAT majors only. The application of communicative procedures and skills necessary to convey messages by means of graphic presentation: an in-depth study of problem solving. Development of student's individual style and main potential. Courses in this sequence must not be taken concurrently.
427. ELECTRONIC GRAPHIC DESIGN (4). STUDIO III. Pr., AT 213, 222, 223, 424 or 464, Junior standing or special permission. No substitution for Studio A or B requirements. Fundamentals of Electronic Graphic Design. Basic techniques of Apple Macintosh Plus and Thunderscan Digitizer. Emphasis on layout, graphic design and illustration projects utilizing computer techniques and equipment.
- 434-435-436. ADVANCED PAINTING/DRAWING I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 231, 232, 233, completion of 18 hours of art history, Junior standing and taken in sequence. Open to VAT majors only. Advanced painting with medium and subject idea determined by instructor in consultation with the student. Emphases in these courses are the strengthening of the student's aesthetic awareness and technical skills as a maturing painter. Live nude models may be used on occasion. Courses in this sequence must not be taken concurrently.
- 444-445-446. ADVANCED PRINTMAKING I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 241, 242, 243, completion of 18 hours of art history, Junior standing. Open to VAT majors only. Advanced printmaking with medium and subject idea determined by student in consultation with the instructor. Emphases in these courses are the strengthening of the student's aesthetic awareness and technical skills as a maturing printmaker. Courses in this sequence must not be taken concurrently.
- 454-455-456. ADVANCED SCULPTURE I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 251, 252, 253, completion of 18 hours of art history, Junior standing and taken in sequence. Open to VAT majors only. Advanced sculpture with medium and subject idea determined by student with approval of the instructor. Emphases in these courses are the strengthening of the student's aesthetic awareness and technical skills as a maturing sculptor. Courses in this sequence must not be taken concurrently.
- 464-465-466. ILLUSTRATION I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 223, completion of 18 hours of art history and Junior standing. Open to VAT majors only. Application of illustrative concepts, media and techniques to various graphic formats. Development of personal skills and an individual style. Courses in this sequence must not be taken concurrently.
484. ADVANCED PHOTOGRAPHY (4). STUDIO 12. Pr., 3.0 minimum average in AT 321 and COI. Open to students who have shown ability, initiative and industry on individual projects. Independent study.
499. SENIOR PROJECT (5). Pr., completion of Group B Studio in area of concentration and must be taken during the student's final quarter. A directed terminal studio project with student's choice of subject and medium. The project will be exhibited and a committee will award a letter grade. Professional quality color slides of the project work must be presented to the Art Department before the student is cleared for graduation.

### ADVANCED UNDERGRADUATE AND GRADUATE

501. ART IN EDUCATION (4). LEC. 2., LAB. 6. Pr., senior standing. Cannot be taken for credit by VAT majors. Lectures, reading and research concerning principles and objectives of pertinent phases of Art for the purpose of understanding their significance in teaching at all levels. Emphasis is placed upon creativity rather than technical skill in laboratory experimentation.
520. INDEPENDENT STUDY IN ADVANCED DESIGN (4). Pr., 3.0 minimum average in AT 424, 425 and 426, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
530. INDEPENDENT STUDY IN ADVANCED PAINTING (4). Pr., 3.0 minimum average in AT 434, 435 and 436, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
540. INDEPENDENT STUDY IN ADVANCED PRINTMAKING (4). Pr., 3.0 minimum average in AT 444, 445 and 446, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
550. INDEPENDENT STUDY IN ADVANCED SCULPTURE (4). Pr., 3.0 minimum average in AT 454, 455 and 456, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
560. INDEPENDENT STUDY IN ADVANCED ILLUSTRATION (4). Pr., 3.0 minimum average in AT 464, 465 and 466, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
570. INDEPENDENT STUDY IN ART HISTORY (3-3). Pr., 18 hours of art history, senior standing. Open to students who have shown ability, initiative and industry on individual projects. Research, drawings and reports on historical topics under supervision.

# Aviation Management (AM)

Professors Williams, Head

Program Coordinator Cash

Assistant Professors Edwards, Dellinger, Fenner, Johnson and Ripley

Professional Flight Coordinator Cash

Students that are not AM majors need departmental approval to take AM 400-level courses.

101. INTRODUCTION TO AVIATION (3). Orientation into aviation management career opportunities and a history of significant events and accomplishments in man's attempt to move through air and space.
200. AEROSPACE PROBLEMS ANALYSIS (3). Pr., MH 161. Application of basic mathematical and physical concepts to problems in the aerospace industry.
201. ELEMENTARY AERONAUTICS (3). LEC. 3. Pr., AM 200. Basic flight physiology, subsonic and supersonic aerodynamics, aircraft propulsion and structures and aircraft maintenance management.
207. BASIC PROGRAMMING AND APPLICATIONS TO AVIATION MANAGEMENT (3). LEC. 3. Pr., AM 200. Introduction to the use of the computer as a problem solving tool. Program structure and development, decision making, documentation.
214. FLIGHT ORIENTATION (1). LAB 3. Basic flight experience course for non-pilots to familiarize aviation majors, engineers, teachers and other students desiring a limited exposure to flight. Course includes ground discussion and aircraft flight time. Special Fee.
- 215-216. PRINCIPLES OF PRIVATE FLIGHT I, II (3-3). General introduction and preparation for the FAA private pilot written examination. Topics: theory of flight, aircraft and engine performance, regulations, meteorology, navigation, airspace utilization and aviation physiology.
- 217-218. PRIVATE PILOT FLIGHT TRAINING I-II (1-1). LAB. 3-3 for 217. Pr., AM 215. For 218 Pr., AM 216 and 217 or COI. Dual and solo flight instruction and discussion to prepare for FAA Private Pilot Certificate. Special Fee.
220. STATISTICS (3). LEC. 5. Pr., AM 200, 207. Introduction to the principles of statistical analysis and application.
304. ELEMENTARY METEOROLOGY (5). LEC. 5. Pr., sophomore standing. Basic principles, causes, effects and phenomena of weather with fundamental techniques of forecasting. Not open to Aviation Management students.
305. AVIATION METEOROLOGY (5). LEC. 5. Pr., PS 206. Basic meteorology as it applies to the operation of aircraft with emphasis on observation of weather elements and the interpretation of flight planning weather information.
306. WEATHER OBSERVATION. (2). Pr., AM 304 or AM 305. Techniques of weather observations and reporting of basic weather information for aviation. Provides assistance for qualification as a supplementary aviation weather station observer.
309. PROPULSION AND SYSTEMS I (4). Pr., PS 206, AM 207. Coverage of propulsion principles, description of reciprocating engines and major components and principles of operations. Description and operation of systems commonly found on aircraft powered by reciprocating engines.
310. PROPULSION AND SYSTEMS II (4). Pr., PS 206, AM 207. Coverage of turbine engine components and principles of operation. Description and operation of systems typically found on commercial transport aircraft and selected aerospace vehicles.
314. AEROSPACE MANAGEMENT AND OPERATIONAL PROBLEMS (5). Pr., AM 207. Introduction to the use of operations research techniques. Included is the role of math modeling procedures, manual and computer generated solutions, applied to the decision making process.
320. ECONOMIC ANALYSIS IN THE AVIATION INDUSTRY (5). LEC. 5. Pr., EC 200 or 301, AM 200, 207. Development of principles required in economic analysis.
322. COMMERCIAL FLIGHT TRAINING I (1). LAB. 3. Pr., Private Pilot Cert. and COI. Continuation of flight training toward a Commercial Pilot Certificate with emphasis on the development of precision and accuracy in all intermediate and advanced flight maneuvers. Special Fee.
323. AIRCRAFT OPERATION AND PERFORMANCE (4). LEC. 4. Pr., Private Pilot Certificate or COI. Principles of aircraft performance and operations, aircraft systems, equipment, aviation weather theory and services, Federal Aviation regulations and preparation for FAA commercial written examination.
324. COMMERCIAL FLIGHT TRAINING II (1). LAB. 3. Pr., AM 322, Coreq., AM 323 and COI. Continuation of flight training toward Commercial Pilot Certificate. Emphasis on cross-country, night and instrument flying. Special fee.
325. PRINCIPLES OF INSTRUMENT FLIGHT (5). LEC. 5. Pr., AM 323 or COI. Instruments, FAA regulations, air traffic control procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examination.
326. COMMERCIAL FLIGHT TRAINING III (1). LAB. 3. Pr., AM 324, Coreq., 325 and COI. Continuation of flight training for the Commercial Pilot Certificate with training in transition to complex aircraft. A continuation of instrument and night instruction and a review of all maneuvers for the commercial flight test. Special Fee.
327. COMMERCIAL FLIGHT TRAINING IV (1). LAB. 3. Pr., AM 326. Coreq., 325 and COI. Completion of FAA requirements for an unrestricted Commercial Pilot Certificate. Special fee.
401. AERONAUTICAL SEMINAR (1). LAB. 2. Pr., senior standing. Special problems and current status of the aerospace industry.
402. LAND USE CONTROL (2). Pr., AM 409. The methods of control of the use of private property with particular emphasis on property near airports.
403. GENERAL AVIATION MANAGEMENT (3). Pr., MN 310, junior standing. An overview of general aviation and its impact and interaction with the total aviation industry including a study of the various users, the suppliers and service organizations, the aircraft and facilities and regulatory framework.



## *Aviation Management*

404. GENERAL AVIATION OPERATIONS (3). LEC. 2, LAB. 3. Current principles and practices in commercial and business/corporate flight operations including organizations, sources of revenue, functions, operation and typical problems.
405. AVIATION SAFETY (3). LEC. Pr., AM 201 or COI. Current problems and issues of aviation safety including aircraft accidents, their cause, effect and the development of safety programs and procedures.
408. AIR TRANSPORT PLANNING (3). Pr., AM 409. Management decision making involved in selection of equipment, routes and the establishment of rates by certified and non-certified air carriers.
409. AEROSPACE LAW AND INSURANCE (3). Pr., MT 241 or 255. The legal structure of aviation including federal, local and state statutes, contracts, insurance and liability, regulatory statutes and case law.
413. AIRPORT MANAGEMENT (3). Pr., MN 310, junior standing. Current practices in management of a civil public airport, including organization, functions, operations, sources of revenue, funding, maintenance and administration.
414. AIRPORT PLANNING (3). Pr., AM 413, principles and procedures pertaining to planning airport facilities required to meet the immediate and future air transportation of a community or region.
416. AIR TRANSPORTATION AND AIRLINE OPERATIONS I (3). Pr., AM 310 and senior standing or COI. Significance of air transportation in modern society. Development of the present system. Economic and social costs and benefits of the present air transport system.
417. AIR TRANSPORTATION AND AIRLINE OPERATIONS II (4). Pr., AM 416 and senior standing or COI. Airline organization, management and operations. Functions of the planning, pricing and scheduling processes in various organizational components. Introduction to airline simulations.
- 417L. AIRLINE OPERATIONS LAB (2). Pr., AM 417 and COI. Simulation of airline operations. Students compete as teams in a simulated commuter airline industry environment. Prepare marketing strategy and campaign; plan fleet and schedule; acquire aircraft; and simulate operating a small airline.
418. INTERNATIONAL AIRLINES OPERATIONS (3). Pr., AM 409, junior standing. International foreign air carriers, influences of ICAO and IATA, national ownership, determinants of power, operational and management practices, routes and fares.
419. AIR TRAFFIC CONTROL (5). LEC. 5. Basic air traffic control procedures, facilities, centers and operations.
420. AIR CARGO OPERATIONS (3). Pr., junior standing. Domestic and international air cargo operations with emphasis on cargo economics, equipment, domestic and international regulatory activities, agents, operational techniques, systems and problems.
421. COMMUTER AIRLINE OPERATIONS AND MANAGEMENT (3). Pr., AM 409, coreq., AM 417 or COI. Management practices and operational characteristics of the commuter airline and its place in the air transportation system.
427. MULTI-ENGINE TRAINING I (2). LEC. 1, LAB. 3. Pr., AM 327 or Commercial Pilot Certificate with Instrument rating and COI. Instruction in the methods and techniques of multi-engine aircraft pilotage. Sufficient ground and flight instruction is given to qualify for the FAA pilot rating of Multi-Engine-Land. Special Fee.
428. PRINCIPLES OF FLIGHT INSTRUCTION (3). Pr., AM 327. The principles of teaching as applied to instructing, analyzing and evaluating flight students with emphasis on preparation for the FAA Flight Instructors Written Examination.
429. FLIGHT INSTRUCTOR TRAINING (1). LAB. 3. Pr., 327 Commercial Pilot Certificate with Instrument rating. Coreq., AM 428 and COI. Discussion, instruction and arranged practice in flight instruction in preparation for the FAA Flight Instructor Certificate. Special fee.
431. MULTI-ENGINE TRAINING II (2). LEC. 2. Pr., AM 327, coreq., AM 427 and COI. Principles of personnel transportation in night and IFR operations; includes aircraft operations, flight planning, weather decision and passenger relations.
432. PRINCIPLES OF PROFESSIONAL FLIGHT (3). LEC. 3. Pr., AM 325 and COI. Advanced aircraft performance IFR operations, high altitude meteorology and FAR part 135. Overview of industry opportunities and required qualifications.
433. TRANSPORT AIRCRAFT FLIGHT TRAINING (1). LAB. 3. Pr., AM 327, 427, 431 and COI. Includes instrument and night instruction, emergency procedures and actual air transportation operations. Preparation for Airline Transport Pilot Certification if otherwise qualified. Special fee.
435. INSTRUMENT FLIGHT INSTRUCTOR TRAINING (2). LEC. 1, LAB. 3. Pr., AM 327, 429 and COI. Discussion, instruction and arranged practice in instrument flight instruction in preparation for the FAA Instrument Instructor Certificate. Special fee.
437. MULTI-ENGINE FLIGHT INSTRUCTOR TRAINING (2). LEC. LAB. 3. Pr., AM 327, 427, 429 and COI. Principles and techniques of multi-engine flight instruction in preparation for FAA Multi-Engine Flight Instructor Rating. Special fee.
491. SPECIAL PROBLEMS (VARIABLE CREDIT). Pr., department approval. Individual student endeavor under faculty supervision involving special problems of an advanced nature in aviation management. May be taken more than once with a maximum credit of six hours.
492. INTERNSHIP IN AVIATION MANAGEMENT. VARIABLE CREDIT (1-6). Pr., departmental approval. Provides student with practical on-the-job training under supervision with aviation agencies. Written reports are required by designated faculty supervisor.

ADVANCED UNDERGRADUATE AND GRADUATE

551. **AEROSPACE SCIENCE (5).** A non-technical presentation of the principles and fundamentals of aviation and aerospace science, related systems and related equipment. Primarily designed for students who require a general knowledge of aviation or aerospace science. It will include lectures by aerospace authorities and visits to aeronautical and aviation facilities. Not open to engineering students.

**Biology (BI)**

Professor Truelove, *Coordinator*

For other staff and related courses, see sections for Botany and Microbiology and Zoology and Wildlife Science.

101. **PRINCIPLES OF BIOLOGY (5).** LEC. 4, LAB. 3. All quarters. Integrated principles of biology with emphasis on organic macro-molecules, bioenergetics, cell structure and function, heredity, evolution and ecology. Designed for the science-oriented curriculum. Credit will not be allowed for both BI 101 and BI 105.
102. **PLANT BIOLOGY (5).** LEC. 4, LAB. 3. Pr., BI 101. All quarters. The morphology, physiology, relationships, distribution and importance of plants. Designed for the science-oriented curriculum.
103. **ANIMAL BIOLOGY (5).** LEC. 4, LAB. 3. Pr., BI 101. All quarters. The morphology, physiology, relationships, distribution and importance of animals. Designed for the science-oriented curriculum. Credit will not be allowed for both BI 103 and BI 106.
105. **PERSPECTIVES IN BIOLOGY (5).** LEC. 4, LAB. 2. All quarters. Principles of biology with emphasis on the relationship between man and modern biological science. Broad topics include cell biology, inheritance, evolution and introduction to ecology. Designed for the student satisfying a general education requirement in natural science. Cannot be used to meet major or minor requirements in biological science. Credit will not be allowed for both BI 101 and BI 105 or SM 101 and BI 105.
106. **HUMAN BIOLOGY (5).** LEC. 4, LAB. 1. Pr., BI 101 or 105 or SM 101. All quarters. Introductory human anatomy and physiology with emphasis on recent improvements in health care. Designed for the student satisfying a general education requirement in natural science. Cannot be used to meet major or minor requirements in biological science. Credit will not be allowed for both BI 106 and BI 103.
107. **ENVIRONMENTAL BIOLOGY (5).** LEC. 4, REC. 1. Pr., BI 105 or 101. All quarters. An introductory ecological approach to understanding man's impact and dependence on the natural environment. Broad topics include ecosystems, nutrient cycles, pollution, pest management, conservation of natural resources, energy and human population. Designed for the student satisfying a general education requirement in natural science. Cannot be used to meet major or minor requirements in biological science.

**Botany and Microbiology (BMI)**

Professors Cherry, *Head*, Lemke, McGuire, Peterson, Truelove, Weete and Williams  
Associate Professors Blevins, Brown, Cody, Dute, Freeman, Kelley, Musso and Singh  
Adjunct Associate Professor Stout

Assistant Professors Boyd, Campbell, Nielsen, Shands and Shaw  
Instructors Causey and Folkerts  
Adjunct Instructors Corsby and Geiger

With few exceptions Principles of Biology, BI 101 and Plant Biology, BI 102, are prerequisite to all courses in this department. For a description of these and other general biology courses see the section for Biology (above). For additional offerings in microbiology consult the curriculum in Veterinary Medicine (VM), especially with reference to advanced courses in Pathobiology (VPB). A program in Biological Statistics (BST) and a curriculum in Molecular Biology (MOB) are also administered through the Department of Botany and Microbiology.

**BOTANY (BY)**

306. **FUNDAMENTALS OF PLANT PHYSIOLOGY (5).** LEC. 3, LAB. 4. Pr., BI 102, CH 203 or 207 or equivalent. Fall, Winter. General aspects of fundamental life processes of plants involving physiological, structural and environmental relationships.
320. **WEED IDENTIFICATION AND ECOLOGY (3).** LEC. 2, LAB. 3. Pr., BI 101-102 or equivalent. Spring. Identification of weeds in vegetative state. Weed distribution and environmental requirements. Field trips will be taken and weed collections will be required.
321. **FATE OF PESTICIDES IN THE ENVIRONMENT (3).** LEC. 2, LAB. 3. Pr., BI 101-102, CH 207 or equivalent. Spring. Pesticide absorption, translocation by plants and effects on plant processes. Behavior of herbicides in soils and effects on soil microorganisms. Mechanisms of herbicide inactivation and the basis for herbicide selectivity.
405. **INTRODUCTORY MOLECULAR GENETICS (4).** LEC. 4, Pr., BI 101, CH 208 and ZY 300 or COI. Winter. Fundamentals of molecular genetics at the level of DNA sequence. Lectures on mechanisms employed by living organism to ensure correct expression, replication and survival will be given. Broad topics will include transcription, translation, regulation, promoters and other regulatory sequences, replication, repair, eukaryote genomes, introns, exons, mobile DNA and RNA processing. Class is a suitable prerequisite for upper level studies in molecular genetics such as ZY 519 and MB 522.

460. SPECIAL PROBLEMS (1-3). Pr., COI, senior standing. All Quarters. A. Anatomy; B. Ecology; C. Molecular Biology; D. Morphology; E. Physiology; F. Taxonomy. A student cannot register for more than three hours credit in any one quarter or in any one area.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for maximum of six hours credit.

### ADVANCED UNDERGRADUATE AND GRADUATE

505. INTRODUCTORY MYCOLOGY (5). LEC. 3, LAB. 4. Pr., BI 101-102 or equivalent. Fall. A systematic survey of the fungi with emphasis on morphology. (Same course as PLP 505.)
506. SYSTEMATIC BOTANY (5). LEC. 3, LAB. 4. Pr., BI 101-102 or equivalent. Spring, Fall, Summer. Identification, classification, nomenclature, distribution and systematic relationship of the seed-bearing plants, utilizing primarily elements of the local flora as study material. The historical background, literature of plant taxonomy and rules of nomenclature. Field trips will include an overnight week-end field trip.
507. SALT MARSH ECOLOGY (6). LEC. 4, LAB. 12. Pr., BI 101-2 or equivalent. Summer. The botanical aspects of local marshes; includes plant identification, composition, structure, distribution and development of coastal marshes. Offered only at the Gulf Coast Research Laboratory. Ocean Springs, Miss.
509. MARINE BOTANY (6). LEC. 5, LAB. 12. Pr., BI 101-2 or equivalent or COI. Summer. Survey, based upon local examples, of the principal groups of marine algae and maritime flowering plants, involving their structure, reproduction, distribution, identification and ecology. Restricted to participants in the Gulf Coast Research Laboratory Teaching Session at Ocean Springs, Miss.
510. COASTAL VEGETATION (4). LEC. 3, LAB. 10. Pr., BI 101-2 or equivalent. Summer. General and specific aspects of coastal vegetation, with emphasis on local examples. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, Miss.
513. GENERAL PLANT ECOLOGY (5). LEC. 3, LAB. 4. Pr., BY 306. Spring. Natural vegetation, environment and interrelationships between the two with primary emphasis on the Southeastern United States. Field trips will be made, including a week-end trip.
514. BIOLOGICAL MICROSCOPY (5). Lec. 2, LAB. 6. Pr., BI 102-103 or equivalent. Fall. Methods of tissue preparation for observation with the light microscope, including fixing, paraffin and plastic embedding, sectioning, general and cyto-chemical staining and mounting. Squash techniques. Optical microscopy, micrometry and photomicrography. Techniques for developing, printing, enlarging and copying for photographic illustration. Preparation of 2 x 2 transparencies.
515. PLANT DEVELOPMENT (5). LEC. 3, LAB. 4. Pr., BY 306 or COI. Spring. The structure and development of plant cells, tissues and organs with emphasis on a review of the current anatomical, experimental and ultrastructural literature.
517. MARINE BOTANY (6). LEC. 8, LAB. 24, 4 days/5 weeks. Pr., BI 101-102 or equivalent. General survey of marine algae, vascular and non-vascular plants associated with the marine and estuarine environment. Structure, reproduction, identification, distribution and ecology are considered. Offered only at Dauphin Island Sea Laboratory.
518. MARSH ECOLOGY (6). LEC. 8, LAB. 24, 4 days/5 weeks. Pr., advanced standing in biology. Floral and faunal elements of various marine marsh communities. Interaction of physical and biological factors will be emphasized. Structured to provide actual field experience. Trips scheduled to acquaint students with examples of marsh types. Offered only at Dauphin Island Sea Laboratory.
550. PLANT MOLECULAR BIOLOGY (4). LEC. 4. Pr., MB 522. Fall. Introduction to plant molecular biology and gene expression in plants including organization and expression of nuclear, chloroplast and mitochondrial genome, transposable elements, plant infectious agents, direct and agrobacterium mediated gene transfer; and application of biotechnology in crop improvements.
554. PHYSIOLOGY OF FUNGI (5). LEC. 3, LAB. 4. Pr., BY 505 and one of the following: MB 300, BY 306 or ADS (CH) 518 or COI. Spring, odd years. Cellular structure, function and metabolism during the vegetative growth cycle, spore germination and spore formation, mode of action of agriculturally important fungicides and the physiology of fungal-induced plant pathogenesis.

### MICROBIOLOGY (MB)

201. PERSPECTIVES IN MICROBIOLOGY (5). LEC. 4, LAB. 3. Pr., BI 101 or 105. Spring. Survey of microbiology directly affecting human affairs. Basic biology of bacteria, fungi and viruses. Special attention given to recognition and control of infectious agents, epidemiology, food handling procedures, sanitation and other aspects important to human health. This course will not satisfy a curriculum requirement for MB 300 or 302. Cannot be used to meet major or minor requirements in biological science.
300. GENERAL MICROBIOLOGY (5). LEC. 3, LAB. 4. pr., BI 101, CH 103. All quarters. Fundamentals of microbiology including history of microbiology, cell structure, chemical composition, growth, nutrition, metabolism, genetics, classification, cultivation and distribution of bacteria, viruses, rickettsia and fungi; discussion of the effects of chemical and physical agents on the growth of microorganisms. Credit in this course precludes credit for MB 302.
302. MEDICAL MICROBIOLOGY (5). LEC. 3, LAB. 4. Pr., BI 101, CH 203 or 207. Spring. Etiology, epidemiology, immunity, identification and pathogenesis of microorganisms of medical importance to man. Credit in this course precludes credit for MB 300. A similar statement is shown for MB 300 above.
400. MICROBIOLOGICAL METHODS (5). LEC. 2, LAB. 6. Pr. MB 300, junior standing. Spring. The instrumental methods used in physical and biochemical analyses of microorganisms and their metabolic products.

405. **INTRODUCTORY MOLECULAR GENETICS (4).** LEC. 4. Pr., BI 101, CH 208 and ZY 300 or COI. Winter. Fundamentals of molecular genetics at the level of DNA sequence. Lectures on mechanisms employed by living organism to ensure correct expression, replication and survival will be given. Broad topics will include transcription, translation, regulation, promoters and other regulatory sequences, replication, repair, eukaryote genomes, introns, exons, mobile DNA and RNA processing. Class is a suitable prerequisite for upper level studies in molecular genetics such as ZY 519 and MB 522.
446. **CLINICAL AND PATHOGENIC MICROBIOLOGY (5).** LEC. 2. LAB. 6. Pr., MB 300, junior standing. Fall. Isolation, cultivation, identification, classification and pathogenesis of infectious agents, including clinical materials: Mycoplasmas (PPL), Rickettsiae and Spirochaetes.
460. **SPECIAL PROBLEMS (1-10).** Pr., COI, sophomore standing. All quarters. A. Applied Microbiology; B. Diagnostic Microbiology; C. Immunology; D. Microbial Ecology; E. Microbial Physiology; F. Microbial Taxonomy; G. Molecular Biology; H. Virology. A student can complete a maximum of 10 credit hours in one area with no more than five credit hours allowable per quarter.
470. **HONORS THESIS (3-6).** Pr., senior standing in the honors program. May be repeated once for maximum of six hours credit.

### ADVANCED UNDERGRADUATE AND GRADUATE

503. **BACTERIAL TAXONOMY (5).** LEC. 3, LAB. 4. Pr., MB 300. Winter. International Code of Nomenclature of bacteria. The development of microbiological literacy; classification of taxa based on phylogeny, molecular and numerical concepts.
504. **INDUSTRIAL MICROBIOLOGY (3).** LEC. 3. Pr., MB 300. Spring. Principles and practices of microbiologists in industry. Areas surveyed to include manufacture of fermented foods, alcoholic beverages, antibiotics, amino acids, enzymes and single-cell protein.
508. **MARINE MICROBIOLOGY (1).** LEC. 5, LAB. 12. Pr., MB 300 and COI. Summer. Introduces the student to the role of microorganisms in the oceans and estuaries. Special emphasis on bacteria and fungi. Lecture and laboratory work includes sampling procedures, taxonomy of marine bacteria, mineralization, microbial fouling, pollution and diseases of marine animals. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, Miss.
521. **INDUSTRIAL MICROBIOLOGY LABORATORY (3).** LAB. 6. Pr., MB 504. Summer. Methods for production, detection, purification of microbial products and one or more projects on fermentations or industrial processes of special interest to the student.
522. **GENE EXPRESSION AND RECOMBINANT DNA (5).** LEC. 3, LAB. 4. Pr., MB 300, ZY 300 and either MB 405 or CH 521. Spring. Structure and function of genes; concepts and techniques in recombinant DNA.
540. **MICROBIAL PHYSIOLOGY AND GENETICS (3).** LEC. 3. Pr., MB 300, CH 203 or 207. Fall. Cellular structure, function, nutritional requirements, energy metabolism, growth cycles, active transport mechanisms, biosynthesis and mutation and genetics.
541. **ENVIRONMENTAL MICROBIOLOGY (5).** LEC. 3, LAB. 4. Pr., MB 300. Spring, odd years. Theory and application of fundamental principles of microbiology, ecology, diversity and biochemistry of microorganisms in their environments.
542. **GENERAL VIROLOGY (5).** LEC. 3, LAB. 4. Pr., MB 300 and ZY 300 or equivalent. Fall. The molecular biology of bacterial, plant and animal viruses; pathogenesis, diagnosis and cultivation.
543. **IMMUNOLOGY (4).** LEC. 4. Pr., MB 300, junior standing. Winter. Immunobiology and immunochemistry of humoral and cellular mechanisms of immunity.
- 543L. **IMMUNOLOGY LABORATORY (2).** LAB. 4. Pr., MB 543 or currently enrolled. Winter. Laboratory exercises in immunology.
545. **MICROBIAL PHYSIOLOGY LABORATORY (3).** LAB. 6. Pr., MB 540. Winter. Laboratory experiments conducted on instrumentation, protoplast formation, cellular function. Respirometry, enzymology, detection of metabolic pathways, antibiotic synthesis and cell rupture techniques.
556. **FOOD MICROBIOLOGY (5).** LEC. 3, LAB. 4. Pr., MB 300. Spring. Relationship of habitat to the occurrence of microorganisms on food, environment affecting the growth of various microorganisms in food; microbiological action in food spoilage and food manufacture; physical, chemical and biological destruction of microorganisms in foods; microbiological examination of foodstuffs; and public health and sanitation microbiology.

### BIOLOGICAL STATISTICS (BST)

210. **MICROCOMPUTER APPLICATIONS IN AGRICULTURE (3).** LEC. 2, LAB. 2. Pr., 10 hours of mathematics. All Quarters. Introduction of microcomputer technology to increase understanding of the use of computer decision aids in agricultural careers; microcomputer hardware including microprocessor, display, keyboard, data storage and retrieval, printer and communication options; microcomputer software including languages, electronic spreadsheet, word processing, data based management and programmed products; and microcomputer interface with data source and processing systems. (Same as AEC 210).
215. **INTRODUCTORY BIOLOGICAL STATISTICS (5).** LEC. 4, LAB. 2. Pr., MH 160. Fall, Winter. Elementary statistics as applied to agriculture and biology including an introduction to empirical frequency distributions, descriptive statistics, elementary probability, sampling, estimation, testing hypotheses, linear regression, correlation and the analysis of variance.
216. **INTRODUCTORY BIOLOGICAL COMPUTATIONS (3).** LEC. 3. Pr., sophomore level. Winter, Spring. Introductory use of the computer for agricultural and biological computations and data reduction. Introduction to FORTRAN programming and to effective and valid use of available program packages in biology.

# ADVANCED UNDERGRADUATE AND GRADUATE

501. BIOLOGICAL STATISTICS (5). LEC. 4, LAB. 2. Pr., MH 161. Fall, Winter, Spring. Basic concepts of experimental statistics, distributions, confidence limits, tests of significance, analysis of variance, linear correlation and regression. For advanced undergraduates and as a beginning course for graduate students in biological sciences.
511. SAS PROGRAMMING (2). LEC. 2. Pr., BST 501 or equivalent and BST 216 or equivalent. Fall, Spring. Introduction to statistical analysis and management of data files using SAS, The Statistical Analysis System. Data entry and management will be emphasized along with selection and execution of the important statistical procedures.

## Building Science (BSC)

Professors Brandt, Head, and Aderhold

Associate Professors Cooper, Killingsworth, Lechner, Mol, Wallace, Weiss and Williams

Assistant Professors Hein, Huston and Love

Instructor Burleson

160. HISTORY OF BUILDING (4). Development and use of construction methods and materials in western civilization from Greece and Rome to the present time in the United States.
200. DRAWING AND PROJECTIONS (3). LEC. 2. LAB. 3. Pr., sophomore standing. Basic architectural drafting techniques.
202. MATERIALS OF CONSTRUCTION (5). Pr., MH 160 and sophomore standing. A survey of common building materials.
203. WORKING DRAWINGS AND SPECIFICATIONS (4). LEC. 2. LAB. 6. Pr., BSC 200 or IE 102 or AR 101 and BSC 202. Graphic construction communications; understanding and/or producing working drawings, shop drawings and specifications.
204. CONSTRUCTION SYSTEMS (3). Pr., sophomore standing. Construction systems for buildings.
211. MECHANICS OF STRUCTURES (5). Pr., MH 161, PS 205. Principles of mechanics as applied to building construction; resolution of external forces; analysis of trusses; shear and bending moments.
311. STRENGTH OF MATERIALS (5). Pr., BSC 211 and junior standing in AR or BSC. Strength of materials of structural members. Lectures, problems.
314. REINFORCED CONCRETE (5). Pr., BSC 311. Reinforced concrete. Lectures, research and problems.
315. APPLIED STRUCTURES (5). Pr., BSC 314. Applied design of wood and steel structures.
323. SOILS AND FOUNDATIONS (3). Pr., BSC 311. Soil conditions and their effects on building foundations.
324. CONSTRUCTION SURVEYING (3). LEC. 2. LAB. 3. Pr., junior standing in BSC, AR or LA. Surveying techniques, topography and dimensional controls for buildings.
325. TEMPORARY STRUCTURES (3). Pr., BSC 311. Design of formwork and temporary structures in construction.
340. CONSTRUCTION SAFETY AND HEAVY EQUIPMENT (3). Pr., junior standing in BSC or AR. Construction operations safety and heavy equipment used in construction.
351. ENERGY AND BUILDINGS (3). Pr., junior standing in BSC or AR. A survey of the effects of climate, design, materials and systems on the energy consumption of buildings. Various energy sources (solar, etc.) will be investigated.
352. HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS (3). Pr., PS 206 and 03 AR or 03 BSC. Analysis of heating, ventilating and air conditioning systems in buildings.
354. PLUMBING AND ELECTRICAL SYSTEMS (3). Pr., PS 206 and 03 AR or 03 BSC. Analysis of plumbing and electrical systems in buildings.
372. INTERMEDIATE COMPUTERS IN CONSTRUCTION (3). LEC. 2. LAB. 2. Pr., CSE 100 or BSC 371 and junior standing in BSC (no PBSC). Use of current software in the constructor's office for estimating, scheduling, financial management and construction records.
399. EXPERIENTIAL LEARNING (2-5). Pr., sophomore standing and COI. May be repeated once for credit. Students may obtain academic credit for participation in learning experiences of a practical nature outside the normal curricular offerings of the University. S-U graded.
- 405-406. CONTRACTING BUSINESS I-II (3-3). Pr., senior standing in BSC. Organizing, managing and operating the contracting firm.
421. CONSTRUCTION ESTIMATING I (5). LEC. 4. LAB. 3. Pr., senior standing in BSC. Detailed estimating of building component quantities.
460. SPECIAL PROBLEMS (1-5). Pr., department head approval, junior standing. Development of an area of concentration through independent study under staff supervision.
490. BUILDING CONSTRUCTION THESIS (8). LEC. 2. LAB. 15. Pr., BSC 405 and 531, final quarter prior to graduation. Cost Analysis and Construction Program for a building or special study (each as approved by the Faculty Committee). Construction program to include all documents required by the Contract and/or necessary to construct the project. Candidate will defend project orally before staff and guest specialists.
531. CONSTRUCTION ESTIMATING II (5). LEC. 4. LAB. 3. Pr., BSC 421. Estimating direct and indirect construction costs and bid preparation.
534. CONSTRUCTION SCHEDULING (5). Pr., BSC 421 and senior standing in BSC. Management techniques for planning, scheduling, controlling costs and leveling manpower by use of CPM.



581. PROJECT MANAGEMENT IN CONSTRUCTION (3). LEC. 2, LAB. 2. Pr., senior standing. Coreq., BSC 405. Procedures required to manage a construction project from initiation through completion. This is a Writing Reinforcement course (WR).

### Chemical Engineering (CHE)

Professor Chambers, *Head*, Baker, Guin, Y. Lee, Neuman, Tarrer and Tatarchuk

Associate Professors Curtis, Krishnagopalan and Roos

Assistant Professors El Halwagi, J. Lee and Placek

Emeritus Professors Vives and Hirth

Adjunct Professors Emert and Hart

Instructor Dunn

General Curriculum (GC) students (those with undeclared majors) may enroll only with departmental consent in CHE 210 and higher courses.

101. INTRODUCTION TO CHEMICAL ENGINEERING I (1). Pr., high school chemistry. The role of the chemical engineer in various industrial process industries.
102. INTRODUCTION TO CHEMICAL ENGINEERING II. (1). Pr., high school chemistry. Role of the chemical engineer in various process industries. Industries not addressed in CHE 101 are considered.
210. MATERIAL BALANCES (3). Pr., CH 112 or 104. Application of principles of material balances to chemical processes.
211. ENERGY BALANCES (4). Pr., CHE 210. Energy balance principles and calculations in processes involving physical changes and chemical reactions. Computer applications.
213. DIGITAL COMPUTERS IN CHEMICAL ENGINEERING (3). LEC. 1, LAB. 6. Pr., MH 162. Introduction to microcomputers and structured programming. DOS Operating System and Pascal programming language. Introduction to solution of chemical engineering problems using equation-solving and graphical application programs.
310. PULP AND PAPER TECHNOLOGY (3). Pr., junior standing. An overview course in pulp manufacturing, bleaching, papermaking, coating and printing.
337. CHEMICAL ENGINEERING THERMODYNAMICS II (4). Pr., EGR 301, CHE 211. Thermodynamics of phase and chemical equilibrium.
361. TRANSPORT I (4). Pr., PS 220. Coreq., MH 265, CHE 211 or EGR 301. Includes conservation equations, fluid statics, dimensional analysis, design calculations for conduits and introduction to rheology, boundary layer theory, compressible fluid flow, flow measurement and turbomachinery.
362. TRANSPORT II (4). Pr., CHE 361, 211 or EGR 301, MH 265. Heat transfer via conduction and convection, heat exchanger design, evaporation.
363. TRANSPORT III (4). Pr., CHE 362. Mass transfer fundamentals and applications of mass transfer principles to the design of gas absorption, drying and humidification equipment.
365. CHEMICAL ENGINEERING ANALYSIS (3). Pr., CHE 362, MH 265. Application of mathematical techniques to the analysis and solution of unsteady-state chemical engineering problems.
366. UNIT OPERATIONS I (3). Pr., CHE 211, 213. Coreq., CHE 337. Principles, design and industrial applications of stagewise processes such as extraction and distillation.
367. UNIT OPERATIONS II (3). Pr., CHE 366. Principles and design of unit operations involving solid-liquid and gas-solid systems such as leaching, crystallization, fluidization and filtration.
370. CHEMICAL REACTION ENGINEERING (4). Pr., MH 265, EGR 301, CHE 211. Design of chemical reactors with homogeneous reaction systems.
382. CHEMICAL ENGINEERING LABORATORY I (3). LEC. 1, LAB. 6. Pr., CHE 213, 361, 362, EGR 301. Industrial chemical engineering equipment. Experimental study of heat and momentum transfer and other topics.
401. COAL PROCESSING TECHNOLOGY (3). Structure, properties, chemistry and utilization of coal.
402. SOLAR THERMAL PROCESSES (3). Pr., CHE 362. Solar energy fundamentals, solar heat transfer, solar heating devices.
410. PULP AND PAPER PROCESSING LABORATORY (3). LEC. 1, LAB. 6. Pr., CHE 310 or 501, 382 and senior standing or COI. Experimental study of pulping and paper making operations.
444. PROCESS DESIGN PRACTICE (2). LAB. 6. Pr., CHE 213. Coreq., CHE 545. Case studies in the application of chemical principles to process synthesis and equipment design.
447. COMPUTER-AIDED PROCESS DESIGN (3). LEC. 1, LAB. 6. Pr., CHE 444, 545, 546. Case studies in process design.
450. SPECIAL TOPICS IN CHEMICAL ENGINEERING (CREDIT TO BE ARRANGED WITH A MAXIMUM OF 10 HOURS). Topical courses in special areas. May include laboratory work. May be taken more than once.
457. MICROCOMPUTER PROCESS DESIGN IN PULP AND PAPER INDUSTRY (3). LEC. 2, LAB. 3. Pr., CHE 444, 545, 556. Application of process simulation to problems encountered in the pulp and paper industry. Design of pulp and paper unit operations and processes.
481. TRANSPORT PHENOMENA (3). Pr., MH 265, CHE 210. Momentum, heat and mass transport in one-dimensional non-turbulent systems.
479. HONORS THESIS (3-6). Pr., junior standing, COI. For honors program students only. Repeatable once for a maximum total of six hours.

486. CHEMICAL ENGINEERING LABORATORY II (3). LEC. 1, LAB. 6. Pr., CHE 362, 363, 366, 382. Experimental study of mass transfer and stagewise operations.
487. CHEMICAL ENGINEERING LABORATORY III (3). LAB. 9. Pr., senior standing or COI. Comprehensive open-ended projects.
488. PULP AND PAPER ENGINEERING LABORATORY (3). LAB. 9. Pr. CHE 370, 410, 501, 510 or COI. Comprehensive open-ended projects.
490. DIRECTED READING (1). Pr., COI. Supervised study.
499. UNDERGRADUATE RESEARCH (3). Pr., junior standing, COI, GPA above 3.0. Individual and small group projects. May be taken twice for credit.

### ADVANCED UNDERGRADUATE

501. INTRODUCTION TO PULP AND PAPER TECHNOLOGY (3). Pr., CH 104 or 112 or equivalent and junior standing or COI. An introductory course on the technology of pulp and paper manufacturing with emphasis on raw materials, pulping, bleaching, papermaking, coating and printing. Designed for students with no previous formal pulp and paper training. Research paper.
510. PULP AND PAPER ENGINEERING (3). Pr., CHE 310 or 501, 363 or COI, CH 208. Coreq., FP 478 and senior standing. Chemical and engineering principles in the manufacture of pulp and paper.
512. SURFACE AND COLLOID SCIENCE (3). Pr., CH 508 or COI. Fundamentals of surface and colloid science with applications to foams, emulsions, thin films, froth floatation, detergency, biological phenomena, papermaking and tertiary oil recovery.
- 512L. SURFACE AND COLLOID SCIENCE LABORATORY (1). LAB. 3. Coreq., CHE 512. Modern experimental techniques of surface and colloid science with applications to pulping and papermaking.
515. COMPUTER APPLICATIONS IN CHEMICAL ENGINEERING (3). LEC. 1, LAB. 6. Pr., CHE 213, 361. Advanced application of microcomputer software to solve chemical engineering problems. Problems of practical importance in chemical production and plant design are selected to demonstrate features of computer languages considered.
518. PROCESS DYNAMICS AND CONTROL (4). Pr., CHE 213, 365, 366, 370, 382, PS 221. Coreq., EE 302 or 361. Mathematical modeling and dynamic analysis of chemical processes. Feedback control, stability and frequency response of linear, single variable systems.
517. DIGITAL PROCESS CONTROL (4). Pr., CHE 516. Analysis and design of computer controlled systems. Advanced topics in process control; feedforward control, cascade control, multivariable control, compensation control and others.
518. PROCESS DYNAMICS AND CONTROL LABORATORY (2). LAB. 6. Coreq., CHE 517. Laboratory experiments in classical and computer control. Computer simulation of control systems. Demonstration and practice of theory taught in CHE 516 and 517.
519. ADVANCED TOPICS IN COMPUTER CONTROL SYSTEMS (4). Pr., CHE 515, 518 or COI. Introduction to the fundamental concepts related to the control of chemical processes using digital computers.
540. NUCLEAR ENGINEERING (5). Pr., PS 305 or 320, MH 265 or COI. Atomic physics and nuclear reactions. Nuclear reactor principles, design and engineering, including radiation, shielding, instrumentation and heat transfer.
543. BUSINESS ASPECTS OF CHEMICAL ENGINEERING (3). Pr., senior standing or COI. The flow of materials and money through the chemical processing industries; marketing; relationships with investors, employees, customers, competitors, suppliers, governments and the public.
545. PROCESS ECONOMICS AND DESIGN (3). Pr., CHE 337, 362, 367, 370. Fundamentals and applications of process economics and design. Computer-aided cost estimation and profitability analysis.
546. COMPUTER-AIDED PROCESS SIMULATION (4). LEC. 2, LAB. 6. Pr., CHE 337, 545 or COI. Fundamentals and applications of computer-aided process simulation. Case studies.
550. ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (CREDIT TO BE ARRANGED WITH A MAXIMUM OF 10 HOURS). Topical courses in special areas for advanced undergraduate and graduate students.
556. MICROCOMPUTER PROCESS SIMULATION IN PULP AND PAPER INDUSTRY (3). LEC. 2, LAB. 3. Pr., CHE 510, 515, 545 or COI. Fundamentals of microcomputer process simulation with applications to the pulp and paper industry. Design of pulp and paper unit operations and small scale processes using spreadsheet programs and commercial simulation software.
560. INTRODUCTION TO PLASTICS (3). Pr., CH 208 or COI. High polymers. Includes the chemistry, technology and uses of cellulose, phenolics and amino plastics, polyolefins, vinyls, styrene, acrylics, polyesters, epoxies, polyamides, polyurethanes, silicones and rubbers.
565. HAZARDOUS MATERIALS MANAGEMENT (4). Pr., CHE 363, 370 or COI. Fundamental principles and regulatory information related to hazardous materials management and engineering.
575. RATE PROCESSES IN MATERIALS (3). Pr., CH 508 or COI. Diffusion in the gas, liquid and solid phases and the fundamentals of chemical reaction kinetics pertinent to the crystallization and transformation of materials.
585. AIR QUALITY ENGINEERING (4). Pr., CHE 363. Sources and chemical nature of air pollutants. Principles of mass transfer as related to the removal of air pollutants. Design calculations and engineering of air pollution control equipment including absorption and adsorption processes.
594. BIOSEPARATIONS PROCESSES (3). LEC. 3. Pr., CHE 363, 366. Fundamentals of commercial scale purification techniques for biologically produced materials.

595. BIOCHEMICAL ENGINEERING (3). Pr., CHE 370. Kinetics and process analysis for biochemical and biological processes. Introductory cell biochemistry.

### Chemistry (CH)

Professors Hargis, Head, Aull, Friedman, Hill, Neely, Shevlin, Ward and Worley  
Associate Professors Dinius, Donnelly, Illies, F. Johnson, Kohl, Livant, McKee,  
Parish, Perry, Stanbury, Squillacote and Webb  
Assistant Professors Cammarata, Love and Mills  
Adjunct Instructors J. Johnson and Milly

Chemistry Laboratory fee per course per quarter is \$20.00. This additional fee applies to CH 103L, 104L, 105L, 111L, 112L, 113L, 207L and 208L. After the 10th day of classes each quarter a Late Fee of \$10.00 in addition to the \$20.00 Laboratory Fee will be assessed. The Laboratory Fee is not refundable after the 10th class day.

101. INTRODUCTORY CHEMISTRY I (2). LEC. 3. Pr., or Coreq., MH 140, 160 or 161. To acquaint science students with the classifications of matter and the manner in which the chemist identifies matter and records the nature of its changes. Atomic structure, chemical bonding, molecular aggregations and the laws summarizing the properties and nature of the physical states of matter are considered.
102. INTRODUCTORY CHEMISTRY II (2). LEC. 3. Pr., CH 101, Coreq., CH 103L. A continuation of the topics described under CH 101.
103. FUNDAMENTALS OF CHEMISTRY I (4). LEC. 4. Pr., high school chemistry. Coreq., MH 160 or 161; CH 103L. Encompasses the subject matter of CH 101 and 102 for the superior student with adequate background preparation. Departmental approval is required for admission to this course.
- 103L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Coreq., CH 102 or 103. The basic laboratory techniques to experimental measurements and to the interpretation of data.
104. FUNDAMENTALS OF CHEMISTRY II (4). LEC. 4. Pr., CH 103 or 102. Coreq., CH 104L. A continuation of CH 102 or CH 103. The methods of preparation and the reactions of individual as well as classes of chemical compounds are used to study and illustrate the mechanism and dynamics of chemical change.
- 104L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., CH 103L. Coreq., CH 104. A continuation of CH 103L.
105. FUNDAMENTALS OF CHEMISTRY III (4). LEC. 4. Pr., CH 104. Coreq., CH 105L. Solution chemistry including various ionic equilibria, coordination compounds, acid-base phenomena and redox processes. Quantitative analytical problem-solving will be emphasized.
- 105L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., CH 104L. Coreq., CH 105. Continuation of CH 103L/104L.
111. GENERAL CHEMISTRY (4). Coreq., MH 160 or 140 or 161. Also 111L. For chemistry majors and others in closely related areas. Credit in CH 101, 102 or 103 precludes credit for this course.
- 111L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Coreq. CH 111. The basic laboratory techniques to experimental measurements and to the interpretation of data.
112. GENERAL CHEMISTRY (4). Pr., CH 111 or 103. Coreq. 112L. Continuation of CH 111. Credit in CH 104 precludes credit for this course.
- 112L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., 111L. Coreq. CH 112. A continuation of CH 111L.
113. GENERAL CHEMISTRY (4). Pr., CH 112. Coreq. 113L. Continuation of CH 112. Credit in CH 105 precludes credit for this course.
- 113L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., 112L. Coreq. CH 113. A continuation of CH 112L.
203. ORGANIC CHEMISTRY (5). Pr., CH 104. Fundamentals of organic chemistry. Designed for students in Human Sciences and others.
207. ORGANIC CHEMISTRY (4). LEC. 4. Pr., CH 104. This course together with CH 208 meets the needs of students in Laboratory Technology, Pre-Medicine, Pre-Dentistry, Pre-Veterinary Medicine, Pre-Pharmacy and in other biological sciences.
- 207L. ORGANIC CHEMISTRY LABORATORY (1). LAB. 3. Pr., or Coreq., CH 207.
208. ORGANIC CHEMISTRY (3). LEC. 3. Pr., CH 207 and 207L. Continuation of CH 207.
- 208L. ORGANIC CHEMISTRY LABORATORY (2). LAB. 6. Pr., or Coreq., CH 208.
209. ORGANIC CHEMISTRY (4). LEC. 4. Pr., CH 208. A continuation of CH 208 with emphasis on those organic compounds considered to be the most important to the understanding of biochemistry; i.e., polyfunctional compounds, carbohydrates, lipids, amino acids, proteins and heterocyclic compounds.
- 209L. ORGANIC CHEMISTRY LABORATORY (2). LAB. 6. Pr., CH 208L.
305. ANALYTICAL CHEMISTRY (3). LEC. 3. Pr., CH 105 and 105L or 113. Theory and application of gravimetric, volumetric and colorimetric chemical analysis.
- 305L. ANALYTICAL CHEMISTRY LABORATORY (2). LAB. 8. Pr., or Coreq., CH 305. Analytical techniques applied to the analysis of ores and minerals.
316. PHYSICAL CHEMISTRY (5). Pr., MH 140 or 160. CH 105 and PS 205. A one-quarter course for pre-medicine students.
470. HONORS THESIS (3-6). Pr., Enrollment in the University Honors Program. May be repeated once for a maximum of six hours credit.

490. SPECIAL PROBLEMS IN CHEMISTRY (5). LAB. 15. Pr., COI, senior standing. Not open to graduate students. An individual problem course. Each student will work under the direction of a staff member on some problem of mutual interest. May be repeated for a maximum of 15 credit hours.

### ADVANCED UNDERGRADUATE AND GRADUATE

504. INTRODUCTION TO MOLECULAR ORBITAL METHODS (5). Pr., CH 209 and 508 or equivalent. Elementary quantum mechanics, Huckel molecular orbital theory, SCF molecular orbital procedures, orbital symmetry problems and applications of the various theoretical procedures to organic chemistry.
507. PHYSICAL CHEMISTRY (4). LEC. 4. Pr., CH 104 or 112; MH 264; PS 221 or 206. A discussion of the more important theories and laws of physical chemistry.
- 507L. PHYSICAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or coreq., CH 507.
508. PHYSICAL CHEMISTRY (4). LEC. 4. Pr., CH 507. Continuation of CH 507.
- 508L. PHYSICAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or coreq., CH 508. Pr., 507L.
509. PHYSICAL CHEMISTRY (4). LEC. 4. Pr., CH 508. An extension of principles in CH 507-508 with special reference to modern theories of the structure of matter.
- 509L. PHYSICAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or coreq., CH 508. Pr., 508L.
510. INTERMEDIATE INORGANIC CHEMISTRY I (5). LEC. 5. Pr., CH 508. Atomic structures, valence bonding and periodic properties of the elements.
511. INTERMEDIATE INORGANIC CHEMISTRY II (5). LEC. 3, LAB. 6. Pr., CH 510. Synthesis and purification of typical inorganic compounds.
512. CHEMICAL THERMODYNAMICS (5). Pr., CH 508. Basic laws governing changes in energy in gases, liquids and solids.
513. ANALYTICAL CHEMISTRY (5). LEC. 3, LAB. 6. Pr., CH 507. Fundamental concepts used in instrumental analytical chemistry and as observed in the laboratory via spectrophotometric, electroanalytical and chromatographic techniques.
518. BIOCHEMISTRY (4). Pr., CH 208. Molecular structure: classification, structure and reactions of the major chemical constituents of living matter. Also includes binding phenomena and bioenergetics.
- 518L. BIOCHEMISTRY LABORATORY (1). LAB. (3). Coreq., CH 518. Identification and quantitation of compounds from the important biochemical classes. Examples include amino acid chromatography, dipeptide sequencing, glucose concentration, etc. (Same as ADS 518L.)
519. BIOCHEMISTRY (4). Pr., CH 518 or equivalent. Metabolism; survey of design and regulation of the major catabolic and biosynthetic (including photosynthesis) metabolic pathways. A brief overview of the flow of genetic information is also included.
- 519L. BIOCHEMISTRY LABORATORY (1). LAB. (3). Coreq., CH 519. Partial purification, kinetic studies and characterization of enzymes and nucleotides from various plants, animals and bacteria. (Same as ADS 519L.)
520. CLINICAL BIOCHEMISTRY (5). LEC. 3, LAB. 6. Pr., CH 302 or CH 519 or equivalent. Principles of clinical chemical analysis.
521. BIOCHEMISTRY (4). Pr., CH 518 or equivalent. Molecular transmission of genetic information. Chemical and biochemical aspects of structure, function and synthesis of nucleic acids, the genetic code, protein biosynthesis, recombinant DNA technology and other topics in biotechnology.
530. ADVANCED GENERAL CHEMISTRY (5). LEC. 4, LAB. 3. Pr., CH 207 or COI, junior standing. An in-depth study of chemistry topics that are traditionally included in high school chemistry. Not available for credit to students in the areas of science, mathematics or engineering.

### Civil Engineering (CE)

Professors Ramey, Head, Judkins, Roberts and Yoo

Feagin Professor Benefield

Gottlieb Professors Güven and Tedesco

Huff Professor Molz

Associate Professors Bowman, R. Brown, Jenkins, Melville, Morgan, Parker and Vecellio

Assistant Professors D. Brown, Cousins, Elton, Lakmazaheri,

Lutz, Sanders, Stallings and Wise

General Curriculum (GC) students (those with undeclared majors) may enroll only with departmental consent.

200. INTRODUCTION TO CIVIL ENGINEERING (1). Pr., sophomore standing in CE or COI. Civil engineering perspectives and work, curriculum and student activities and opportunities. Discussion of construction, environmental, geotechnical, hydraulic, structures and transportation engineering and undergraduate and graduate speciality areas in CE at Auburn.
201. SURVEYING (3). LEC. 2, LAB. 3. Coreq., CE 202. Data collection and analysis emphasized. Analysis of errors, distance and angle measurements; leveling; traversing; simple curves; topographic mapping and construction surveying.
202. COMPUTER APPLICATIONS IN CIVIL ENGINEERING (3). LEC. 2, LAB. 3. Pr., MH 163 and CSE 120. Computer programming using BASIC computer solutions of civil engineering problems, library programs and computer graphics.

301. CIVIL ENGINEERING ANALYSIS (3). Pr., MH 265, CE 202. Applications of calculus and ordinary differential equations, numerical methods, vector algebra and linear algebraic equations to civil engineering problems.
303. CIVIL ENGINEERING STATISTICS (4). Pr., MH 264, CE202. Probability concepts, distributions, estimation, hypothesis testing, regression, correlation analysis, emphasis on civil engineering applications.
310. HYDRAULICS I (3). Coreq., CE 301, ME 301, 321. Fundamental concepts of fluid mechanics, hydrostatics, kinematics, ideal flow, viscous effects, transport phenomena, drag, laminar and turbulent flow in pipes and channels.
311. HYDRAULICS II (3). Pr., CE 310. Applications of fluid mechanics, pipe flow, fluid measurements, pipe networks, pumps, open channel, dimensional analysis and theory of modeling.
- 311L HYDRAULICS LABORATORY (1). Coreq., CE 311. Laboratory experiments and demonstrations, pipe flow, pumps, open channels, gates, weirs, analysis and presentation of hydraulic data.
312. HYDROLOGY (3). Pr., CE 311, CE 303. Hydrologic cycle, precipitation, infiltration, runoff, unit hydrograph, rational method, evaporation, flood routing, ground water, frequency analysis, synthetic data generation.
320. URBAN HYDRAULIC SYSTEMS DESIGN (3). Pr., CE 310. Design of water collection and distribution facilities and waste collection systems.
350. HIGHWAY ENGINEERING I (3). Pr., CE 201, junior standing. Introduction to highway engineering practice with emphasis on facility design and operation. Topics include highway system characteristics; transportation planning; traffic operations and control; driver, vehicle and roadway characteristics; geometric designs; and highway safety.
360. THEORY OF STRUCTURES I (4). LEC. 3. LAB. 3.Pr., EGR 207. Coreq. CE 301. Basic structural analysis of determinate structures, deflection curves, influence lines and their application on determinate structures, column buckling. Laboratory sessions on the properties of structural materials and fundamental behavior of solids.
362. THEORY OF STRUCTURES II (3). Pr., CE 360. Structural analysis of indeterminate structures using geometric and energy methods. Influence lines for indeterminate structures. Approximate methods.
364. MATRIX METHODS OF STRUCTURAL ANALYSIS (3). Pr., CE 362. Introduction to stiffness and flexibility methods. Computer implementation of stiffness method. Introduction to structural design utilizing matrix analysis methods.
382. CIVIL ENGINEERING MATERIALS (4). LEC. 3. LAB. 2. Pr., junior standing. Introduction to common civil engineering materials used in construction of civil facilities including building, highways, etc. Materials to be included are concrete, wood, asphalt, steel and aggregates.
400. ADVANCED SURVEYING AND MAPPING (5). LEC. 4. LAB. 3. Pr., junior standing. Programming principles and measuring are emphasized. Selected topics from map projections, electronic and special instruments: geodesy.
401. PROFESSIONAL PRACTICE (1). LEC. 1. (S-U graded). Pr., senior standing. Professional engineering business, management, liabilities, registration and ethics. Owner/designer/constructor team. Types of human behavior and interacting with people. Technical communications.
420. WATER TREATMENT (3). Coreq., CE 320. Theory, design and operation of water treatment facilities.
421. WASTEWATER TREATMENT (4). LEC. 3. LAB. 3. Pr., CE 420. Theory, design and operation of wastewater treatment facilities.
422. ENVIRONMENTAL ENGINEERING DESIGN I (5). Pr., CE 421. Process design of environmental engineering systems.
423. ENVIRONMENTAL ENGINEERING DESIGN II (5). Pr., CE 311, 421. Hydraulic design of environmental engineering systems.
428. RADIOLOGICAL HEALTH ENGINEERING (3). Pr., senior standing. Sources and properties of radiation, ionizing effects, biological effects, dosimetry, detection and measurement, design of radiation shielding, decontamination, disposal of wastes, legal aspects of radiation control, public attitudes.
430. INTRODUCTION TO SOIL MECHANICS (4). LEC. 3. LAB. 3. Pr., CE 301, GL 315. Physical properties of soils; subsurface investigations; clay mineralogy; soil classification; concept of effective stress; consolidation theory; time-settlement analyses; soil compaction and shear strength.
431. SOIL AND FOUNDATION ENGINEERING (3). Pr., CE 430. Slope stability; vertical and lateral soil pressures; bearing capacity; foundations.
440. CONTRACTS AND SPECIFICATIONS (3). Coreq., CE 460, senior standing. Legal and technical principles of construction contract documents. Drawings, plans and specifications, contract law, professional liability and ethics.
441. INTRODUCTION TO CONSTRUCTION (3). Pr., COI. Fundamental concepts of the construction industry and practices, contracts and specifications and construction management methods and tools.
450. TRAFFIC ENGINEERING FUNDAMENTALS (3). Pr., CE 350. The fundamental elements of traffic engineering including traffic studies, traffic operations and traffic control devices.
452. AIRPORT DESIGN (4). Pr., CE 350 or COI. An analysis of the elements affecting the design of airports including runway configuration, capacity analyses, geometric design of runways and taxiways, pavement design and airfield drainage.
454. HIGHWAY ENGINEERING II (3). Pr., CE 350, IE 360. Planning and development of highway projects; preparation of project plans; earthwork; pavement and drainage design; construction and maintenance practices.
460. REINFORCED CONCRETE DESIGN I (3). Coreq., CE 362. Concrete properties. Design synthesis and analysis of reinforced concrete beams, slabs and columns. Reinforcement detail.



465. STEEL DESIGN I (3). Coreq., CE 362. Steel properties. Design synthesis and analysis of steel members in tension, compression, shear and flexure. Structural fasteners.
479. HONORS THESIS (3-6). Pr., COI and department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (CE Honors Program students only. May be repeated once for a maximum of six total credit hours.)
490. SPECIAL PROBLEMS. (CREDIT 1-5). Pr., COI and department head approval. Individual student endeavor under staff supervision involving special problems of an advanced nature in civil engineering.

### ADVANCED UNDERGRADUATE AND GRADUATE

511. OPEN CHANNEL DESIGN (3). Pr., CE 311. Fundamental concepts, uniform flow, rapidly varied flow, gradually varied flow, subcritical and supercritical flow, water surface profiles, energy dissipation, introduction to transient phenomena.
513. COASTAL ENGINEERING. (3). Pr., CE 311. Basic wave theory, diffraction, reflection, refraction, wind waves generation, wave effects on structures and sediments.
515. SUBSURFACE HYDROLOGY (3). Pr., CE 311. Soil moisture and groundwater, geology of groundwater, principles of groundwater flow, regional flow systems, flow to wells.
516. SUBSURFACE HYDRAULIC MEASUREMENTS (3). Pr., CE 515 or COI. Measurement of hydraulic conductivity, porosity and other properties using slug tests, pumping tests and flowmeter tests. Design of hydraulic tests, pumping wells, observation wells and monitoring wells.
517. WATER RESOURCES ENGINEERING (3). Pr., CE 311, 312. Uses and sources of water; economic, hydrologic, hydraulic, environmental and legal aspects of design and operation of water-resource systems; multi-purpose projects; irrigation, hydroelectric power generation and flood control.
518. STORMWATER DRAINAGE DESIGN (3). Pr., CE 312. Urban, highway and airfield storm runoff estimation. Flood plain prediction and management. Hydraulic design of stormwater drainage systems, inlets, storm sewers, open channels, culverts, detention basins.
520. ENVIRONMENTAL ENGINEERING CHEMISTRY I (3). Pr., COI. Equilibrium chemistry aspects of environmental engineering.
- 520L. ENVIRONMENTAL ENGINEERING CHEMISTRY I LABORATORY (1). Pr., COI. Coreq., CE 520. Laboratory testing procedures and experiments relating to the treatment of waters and wastes.
521. ENVIRONMENTAL ENGINEERING CHEMISTRY II (3). Pr., CE 520 or COI. Numerical and graphic techniques associated with physical, chemical and biological aspects of environmental engineering.
- 521L. ENVIRONMENTAL ENGINEERING CHEMISTRY II LABORATORY (1). Pr., CE 520 and 520L or COI. Coreq. CE 521. Continuation of CE 520L. Laboratory testing and experiments related to water and waste treatments.
523. ENVIRONMENTAL HEALTH ENGINEERING (3). Pr., COI. Application of engineering methodology to communicable disease control, insect and rodent control, milk and food sanitation, noise control, industrial hygiene, refuse collection and hazardous waste management.
524. AIR POLLUTION (5). Pr., COI. The nature, sources and effects of polluting materials including gases, dusts, vapors and fumes and the relations of atmospheric conditions to their dispersal. Introduction to theory and design of air pollution control devices and sampling programs. Legal aspects of air pollution.
527. FUNDAMENTALS OF WATER SUPPLY AND WASTE TREATMENT (5). Pr., COI. (Not for credit for civil engineering students). The principles of water supply and waste disposal and the chemistry and biology of water and waste treatment will be presented. Alternatives in water supply and waste disposal will be considered and the theory of treatment operations will be discussed. Laboratory exercises will be conducted.
528. FUNDAMENTALS OF ADVANCED WATER AND WASTEWATER TREATMENT (3). Pr., COI. (Not for graduate credit for civil engineering students.) The principles of various methodologies for advanced water and wastewater treatment will be discussed. Economic trade-offs and process selection will be emphasized.
530. SHALLOW FOUNDATION DESIGN (3). Pr., CE 431. Design of spread footings, combined footings, mat foundations, rigid and flexible retaining walls.
531. DEEP FOUNDATION DESIGN (3). Pr., CE 431. Single piles, vertical and lateral loads, pile installation, pile groups, field load tests, drilled shafts and caissons. Design and construction methods.
532. EARTH RETAINING STRUCTURES DESIGN (3). Pr., CE 431 or equivalent. Lateral earth pressure, gravity and cantilever walls, reinforced soil, soil nailing, anchored bulkheads and braced excavations. Design project.
538. EARTH DAM ENGINEERING (3). Pr., CE 431. Earth dam design and construction. Material selection, filter design. Flownets in earth dams. Stability analysis of earth dams.
542. CONSTRUCTION MANAGEMENT (3). Pr., senior standing. Project planning and scheduling, estimating and bidding, labor law, labor productivity, project safety.
544. CONSTRUCTION EQUIPMENT AND METHODS (3). Pr., senior standing. Selection of equipment for heavy construction operations; Production rates, owning and operating costs, optimizing equipment mix. Construction methods; formwork, compressed air and dewatering systems, blasting.
550. TRAFFIC ENGINEERING ANALYSIS (3). Pr., CE 350. Practice of traffic engineering emphasizing capacity analyses.
551. TRAFFIC CONTROL SYSTEMS DESIGN (4). Pr., CE 350. Fundamental design concepts for highway traffic control systems. Topics include control requirements and warrants; hardware operation and equipment selection; development and implementation of timing plans for isolated intersections and intersection networks.
553. GEOMETRIC DESIGN (4). Pr., CE 350. An analysis of the elements affecting the location and design of rural highways, urban highways and arterial streets including design controls and criteria, cross-section elements, intersection design, interchange design and social and environmental considerations.

554. **FREWAY PLANNING AND OPERATIONS** (3). Pr., CE 350. Planning, design and operation of urban freeways and expressways and rural interstate facilities. Topics include project planning and development; design concepts and criteria; interchange and ramp design; capacity analysis; freeway operations; surveillance and control systems.
556. **TRANSPORTATION PLANNING** (3). Pr., CE 350 or COI. The planning process for urban and regional transportation development. Topics include planning objectives and data requirements; planning inventories; modeling of trip-making behavior; development and evaluation of alternative plans; transportation system management concepts.
558. **RAILWAY ENGINEERING** (3). Pr., CE 350. Fundamental elements affecting the planning, design and operations of rail systems.
560. **REINFORCED CONCRETE DESIGN II** (3). Pr., CE 460. Building assemblages. USD for beams; T-beams; doubly reinforced beams; long columns and beam-columns; one way and two way slabs; footings; retaining walls. Interpretation of codes. Serviceability check.
562. **PRESTRESSED CONCRETE DESIGN** (3). Pr., CE 460. Properties and behavior of prestressed concrete. Prestressing systems and end anchorages. Loss of prestress. Analysis and design of beams for flexure. Camber, deflection and cable layout.
565. **STEEL DESIGN II** (3). Pr., CE 465. Structural assemblages. Interpretation of codes; analytical verification of lateral frames.
567. **COMPUTER METHODS IN STRUCTURAL ENGINEERING** (3). Pr., CE 364. Principles of matrix formulations of structural problems; force and displacement methods. Algorithms for computer programs for analysis of trusses, beams and frames. Use of computer programs, p columns, floor and wall assembly and wood formwork. Timber trusses and laminated arches.
568. **STRUCTURAL DYNAMICS I** (3). Free and forced vibration of single degree of freedom systems. Identification of dynamic loads. Response spectra.
569. **TIMBER DESIGN** (3). Pr., CE 362. Properties and behavior of timber and plywood. Design of timber beams, columns, floor and wall assembly and wood formwork. Timber trusses and laminated arches.
570. **WIND ENGINEERING** (3). Pr., CE 362; CE 460; or CE 465. Wind phenomena and wind pressures on structures; effects of wind on structures and damage mechanism; building codes, standards and procedures pertaining to wind engineering; design of wind resistant structures.
582. **OPTIMIZATION METHODS** (3). Pr., CE 301. Applications of calculus, linear programming and dynamic programming to civil engineering systems.
583. **SIMULATION METHODS** (3). Pr., CE 303. Monte Carlo methods; continuous variable simulations, applications of discrete variable simulation languages to civil engineering systems.
584. **SOIL STABILIZATION** (3). Pr., CE 430 or equivalent; junior standing. Methods of stabilizing soft soil; consolidation, compaction with the use of lime, cement and other additives; construction operations, costs and field control related to soil stabilization.
585. **ASPHALT TECHNOLOGY** (3). LEC. 2. LAB. 3. Pr., CE 382. Production and uses of asphalt; measurement and significance of laboratory properties of asphalt, including viscosity, penetration, flashpoint, ductility, solubility, thin film oven test and specific gravity; measurement of asphalt mix properties, including Marshall Stability and maximum specific gravity.
587. **PAVEMENT DESIGN** (3). Pr., CE 350, 382, 430. Material characterization, pavement response models, pavement performance models, structural design systems.
589. **PAVEMENT CONSTRUCTION** (3). Pr., CE 382. Methods, equipment and quality control for pavement materials production and placement; materials include soils, granular layers, asphalt concrete, surface treatment and Portland Cement Concrete; description of plans and specifications for each material.
590. **SPECIAL PROBLEMS (CREDIT 1-5)**. Pr., COI and department head approval; may be taken more than one quarter. Staff supervision of advanced, individual student investigations of specialized problems in civil engineering.

### Communication (COM)

Professors Richardson, *Head*, L. Barker and Overstreet

Associate Professors Brown, Fitch-Hauser Plasketes, Villaume and Weaver

Assistant Professors D. Barker, Brinson, Floyd, Padgett and White

Adjunct Associate Professor Rotfeld

Adjunct Assistant Professor Felkey

Instructors Bricker and Harney

### GENERAL COMMUNICATION (COM)

100. **PROFESSIONAL COMMUNICATION** (3). Oral communication theory and practice in interviewing, oral reporting, public speaking with emphasis on content, organization, delivery and adaption to the audience.
141. **GROUP PROBLEM SOLVING THROUGH DISCUSSION** (5). Group problem solving through discussion. The values and limitations of discussion, the prerequisites of reaching agreement and a systematic approach to solving problems in group discussion. Leadership in problem solving.
171. **PARLIAMENTARY PROCEDURE** (1). To aid the individual who may lead or participate in discussions or organizations where orderly procedure is needed. Theory and practice both employed.

250. FOUNDATIONS OF HUMAN COMMUNICATION (5). The nature, purposes and process of communication. Theories examining the use of verbal and nonverbal codes, the influence of context and the effects of messages in a variety of settings.
260. FOUNDATIONS OF RHETORIC AND SOCIAL INFLUENCE (5). Examines the impact of discourse in public discussion of social and political issues; traces the development of rhetorical theory from its classical roots to contributions by modern thinkers; relates rhetorical theory and analysis to understanding of the persuasive discourse in our society.
310. SPEAKING BEFORE AUDIENCES (5). Pr., COM 230, 250, 260. Composition and delivery of original speeches for Communication majors only.
311. PERSUASIVE DISCOURSE (5). Pr., COI. Understanding, practicing and analyzing persuasion. Survey of alternative theoretical approaches to attitude formation and change. Practical experience in organizing and presenting persuasive messages. Developing skills as a critical evaluator of persuasion in natural settings.
320. FUNDAMENTALS OF ORAL INTERPRETATION OF LITERATURE (5). Oral readings of prose, poetry and drama, enhancing the student's understanding and appreciation of the art of literature by engaging him actively in reading the literary text aloud.
340. COMMUNICATION IN ORGANIZATIONS (5). Focuses on prevalent communication skills in complex human organizations. Students participate in a variety of communication-related activities including interviewing, the development of a consulting prospectus and presentational speaking. Theoretical considerations for each performance area are stressed.
341. SMALL GROUP COMMUNICATION (5). Pr., COM 230, 250, 260. Group processes such as decision-making, problem-solving, leadership and conflict management for Communication majors only.
370. ARGUMENTATIVE DISCOURSE (5). Debating techniques and procedures; their application to issues of current public interest; the gathering, organization and presentation of facts, proofs, evidence.
375. DEBATE WORKSHOP (1). Advanced national debate question for experienced debaters. Analysis of logical, emotional proofs in competitive debate. Lecture and practical work. May be repeated for a maximum of three credit hours.
400. HONORS THESES (3-6). Pr., senior standing and enrollment in the Honors Program. Repeatable once for a maximum of six hours credit.
410. COMMUNICATION STRATEGIES OF SOCIAL MOVEMENTS (5). An examination of the communication techniques of contemporary social movements to attract members, solidify support and effect social change. Topics to be covered include: stages of development of movements; issues, persuasive strategies and stylistic devices of representative groups; and, nature and impact of social movements.
420. ORAL INTERPRETATION OF PROSE (5). Pr., COM 320 or COI. Develops skill in the oral reading of creative prose. Theories concerning the sound, sense and performance of prose.
421. ORAL INTERPRETATION OF POETRY (5). Pr., COM 320 or COI. Theories concerning problems in reading verse, criticism and performance; modes of group performance are included.
422. READERS THEATER (5). Pr., COM 320 or COI. Investigates literature appropriate to group performance and treats the techniques of adaptation, compilation, rehearsal and staging of non-dramatic literature.
441. THEORIES OF LEADERSHIP (5). Emphasizes theory and research in leadership as a communication variable and behavioral practice in small group and organizational settings. Students participate in numerous leadership simulations.
450. PSYCHOLOGY OF COMMUNICATION (5). Pr., one course in psychology. Speech as a psychological phenomenon with consideration of language development, symbolism, verbal learning. Small groups and audience behavior and psychological studies in various areas of communication situations.
451. SURVEY RESEARCH METHODS IN MASS COMMUNICATION (5). Theory and practical experience in methods of survey research in mass media and public relations. Sampling techniques, interview strategies, questionnaire development and data analysis.
470. LEGAL COMMUNICATION (5). Three communication subjects of significance to the legal profession are treated; the initial lawyer/client interview, legal negotiation and trial practice. The theory and research base of these three topics will be investigated, and practicum exercises will assist student development of needed skills.
480. INTERPERSONAL COMMUNICATION (5). An analysis and comparison of several approaches to the study of current problems in interpersonal behavior and relational communication. Topics will include: contexts of varying person perception; interpersonal attraction; and how person perception is related to behavior.
481. NONVERBAL COMMUNICATION (5). Research and theory in several areas of non-verbal communication including kinesics, proxemics, paralinguistics, environment and personal appearance.
490. SPECIAL TOPICS IN SPEECH COMMUNICATION (1-5). Examines selected topics in Speech Communication. May be repeated; only five hours applicable to the major.

#### ADVANCED UNDERGRADUATE AND GRADUATE

512. COMPUTER APPLICATIONS TO COMMUNICATION THEORY AND RESEARCH (5). Applies computer simulation techniques to the process of message construction, diffusion of information, small group interaction and organizational network analyses. Course also utilizes statistical packages in the testing of the communication dependent hypotheses.

# RADIO/TELEVISION/FILM (RTF)

230. FOUNDATIONS OF MASS COMMUNICATIONS (5). The history and bases of mass communication in the U.S., emphasizing the social, cultural, regulatory and economic aspects of the American mass communication system.
235. MODES OF FILM COMMUNICATION (5). The film industry's contribution to television and other forms of mass communication; an analysis of the styles and forms of film production as entertainment, communication, education and art.
330. INTRODUCTION TO BROADCAST PRODUCTION (5). Pr., COM 230. Basic principles of single channel audio production, television studio production and television post-production techniques.
334. RADIO PRODUCTION TECHNIQUES I (5). Pr., COI. Analysis of the creative efforts and responsibilities in the primary stages of broadcast production. Practice in writing, producing, directing, performing and crewing radio productions and taped material.
335. WRITING FOR RADIOTELEVISION — FILM (5). Pr., COI. The technique of writing dramatic and non-dramatic material for television, radio and films. Special emphasis is placed on performance. Students may elect to emphasize one area.
336. TELEVISION PRODUCTION — DIRECTION I (5). Pr., COI. Individual and group projects in the development and production of programs and formats; an intense study of directing theory and the director's role through presentation of educational and dramatic materials.
337. ELECTRONIC FIELD PRODUCTION (5). Pr., COI. The principles and techniques of video tape production with emphasis on portable and remote equipment. The course includes the production and direction of electronic news gathering projects along with the scripting of various creative field assignments.
338. BROADCAST NEWS WRITING (5). Pr., COI. Writing and editing news and informational materials for television and radio. Students solicit and prepare news from and for local sources.
430. RADIO/TELEVISION PROGRAMMING STRATEGIES (5). Pr., COM 230. Introduces students to the principles, processes, theories and strategies of programming for radio and television stations and for cable television systems. An introduction to interpreting broadcast ratings.
431. THE SOCIAL INFLUENCE OF MASS MEDIA (5). Functions and effects of mass communication on contemporary social norms and values. The impact of the media on the level of violence and aggressive behavior; the nature of the political process; and individual attitudes and behavior.
432. BROADCAST MANAGEMENT (5). Investigates principles and practices of managing broadcasting stations and cable operations.
433. MEDIA, LAW AND REGULATION (5). Examines legal, professional and ethical constraints on the mass media.
434. AUDIENCE RESEARCH (5). Examines broadcast market and audience research methodologies; the application of research to programming and sales; and the broadcast audience ratings companies.
436. CINEMA AND SOCIETY (5). Pr., COM 235 or COI. The role of film, its history, contributions and effectiveness as an area of expression and communication; an analysis of the social, artistic, economic and cultural factors which have influenced the film.
439. INTERNSHIP (3 or 6). Pr., departmental permission and junior standing. S-U grading only.
534. RADIO PRODUCTION TECHNIQUES II (5). Pr., COM 334 or COI. A continuation of COM 334 with further refining of writing, producing, directing, performing and crewing radio productions and audio taped material.
536. TELEVISION PRODUCTION — DIRECTION II (5). Pr., COM 336. Individual and group projects in the creation of program material with special emphasis on the writer-producer and his role in the industry.

# PUBLIC RELATIONS (PRCM)

304. INTRODUCTION TO PUBLIC RELATIONS (5). Pr., JM 101. The broad spectrum of the field of public relations. The various communication skills and technologies necessary for successful public relations will be identified and explored. Credit for this course precludes credit for JM 204.
402. PUBLIC RELATIONS CAMPAIGNS (5). Investigates selected professional code of ethics and considers appropriate ethical principles for PR practitioners. Also focuses on applying ethical standards to planning campaigns for various target publics.
404. PUBLIC RELATIONS CASE STUDIES (5). Pr., COM 304 or JM 204 or COI. Investigation and analysis of public relations problems through case studies. Credit for this course precludes credit for JM 404.
408. PUBLIC RELATIONS WRITING AND RESEARCH (5). Pr., COM 451. Focuses on methods of gathering and reporting information used in various PR messages examines research techniques and instruments used in public relations.

**Communication Disorders (CD)**

Professors Fitch, Head, and Haynes  
Associate Professors Pindzola and Moran  
Assistant Professors Darling and Haak  
Adjunct Professor Weidner

Clinical Supervisors Clark-Lewis, Crews, Paxton and Zylla-Jones

In the following courses, a (\*) denotes that effective Fall, 1990, a GPA of 2.5 is required to enter the course; a (\*\*) denotes that effective Fall, 1990, a GPA of 2.2 is required to enter the course.

**SPEECH PATHOLOGY**

- 340. THE SPEECH AND HEARING MECHANISM (5). Anatomy and physiology of the speech and hearing mechanism.
- 341. PHONETICS (4). Principles of phonetics and their application to speech.
- 350. INTRODUCTION TO SPEECH PATHOLOGY — AUDIOLOGY (5). Survey of the field of speech pathology-audiology. Includes history of the profession, the inter-relatedness of the various pathologies, general principles of evaluation and therapy and the profession itself.
- 355. SPEECH AND HEARING SCIENCE (5). Pr., CD 340, 341. Introduction to the normal processes of speech, language and hearing including: the physiological aspects of normal human speech communication, the hemispheric processing of language, the acoustical aspects of speech production and transmission, the psychoacoustic aspects of speech reception and the perceptual variables associated with linguistic behavior.
- 450. PRINCIPLES OF SPEECH-LANGUAGE PATHOLOGY (5). Not open to students emphasizing or majoring in speech-language pathology and audiology. Basic principles underlying a speech-language pathology program in a school setting. Description and discussion of disorders of oral communication, the identification of such disorders, principles of management and the role of the classroom teacher.

**ADVANCED UNDERGRADUATE**

- 551. ARTICULATION DISORDERS (5). 1Pr., CD 340, 341 or equivalent\*\*. Introduction to the principles of normal and deviant articulation acquisition.
- 552. NORMAL AND DEVIANT LANGUAGE ACQUISITION IN CHILDREN (5). Pr., CD 340, 341 or equivalent\*\*. Introduction to the principles of normal and deviant language acquisition.
- 553. FLUENCY DISORDERS (5). Pr., CD 340, 341 or equivalent\*\*. Introduction to the principles of fluent and disfluent verbal behavior.
- 554. VOCAL DISORDERS (5). Pr., CD 340, 341 or equivalent\*\*. Introduction to the principles of normal and deviant vocal behavior.
- 556. COMMUNICATION DISORDERS IN THE AGING (4)\*\*. Not open to students majoring in speech-language pathology and audiology. Consideration of the normal communicative process and changes which may accompany the aging process. A basic study of the symptoms, causes and treatment of hearing, speech and language disorders in the geriatric population.
- 557. EVALUATION OF RESEARCH IN SPEECH PATHOLOGY AND AUDIOLOGY (5). Pr., 551 or 552 or 553 or equivalent\*\*. A critical survey of common experimental designs and statistical procedures used in the speech-language pathology/audiology literature. Designed for consumers of research as opposed to researchers.
- 558. INTRODUCTION TO CLINICAL PROCEDURES IN SPEECH PATHOLOGY (4)\*\*. Pr., two of the following; CD 551, 552, 553, 554 (one of these must be 551 or 552). Orientation to clinical activities, management methods and preparation of professional reports. Clinical observation required.
- 559. CLINICAL PRACTICUM IN SPEECH-LANGUAGE PATHOLOGY (1). Pr., CD 558 or equivalent\*. May be repeated for a maximum of two hours toward minimum degree requirements.

**AUDIOLOGY**

- 560. INTRODUCTION TO AUDIOLOGY (5)\*\*. Principles of auditory reception, the hearing mechanism and the problems involved in measuring, evaluating and conserving hearing.
- 561. HEARING PATHOLOGY (5). Pr., CD 560 or equivalent\*\*. Evaluation and rehabilitation of aural handicapped children and adults; hearing aids and hearing training. Clinical practice.
- 562. HEARING EVALUATION, REHABILITATION AND CONSERVATION (5). Pr., CD 561 or COI\*\*. Detailed concern for the rehabilitation problems of children and adults in the area of auditory training, speech reading and speech conservation. Clinical practice.
- 565. INTRODUCTION TO CLINICAL PROCEDURES IN AUDIOLOGY (3). Pr., CD 560 or equivalent\*. Audiological instrumentation and test procedures.
- 567. ADVANCED AUDIOLOGICAL EVALUATION PROCEDURES (2). Pr., CD 565 and 562 or equivalent\*. Procedures in masking and special testing.



**Computer Science and Engineering (CSE)**

Professors Seidman, Head, Brown and deMaine

Associate Professors Day and Phillips

Assistant Professors Carlisle, Chang, Cross, McCreary, Pancake and Ward

Instructors Kahai, Rossi and Slaminka

100. INTRODUCTION TO PERSONAL COMPUTER APPLICATIONS (3). Introduction to personal computers and software application packages including word processing, spreadsheets and data base systems. Lab sessions provide a hands-on environment in which to master the basic skills required for proper utilization of each package. No prior knowledge of computers is assumed.
110. INTERMEDIATE PERSONAL COMPUTING (3). LEC. 2, LAB. 3. Pr., CSE 100 or equivalent. Continued development of topics covered in CSE 100, with special emphasis on practical applications.
120. INTRODUCTION TO ENGINEERING COMPUTATION (3). LEC. 2, LAB. 3. Coreq., MH 161. Structured digital computer programming with emphasis on the use of the digital computer as an engineering tool.
200. FUNDAMENTALS OF COMPUTER SCIENCE I (4). LEC. 3, LAB. 3. Coreq., MH 163. Broad introduction to programming methodology. Emphasis is placed on problem-solving strategies and techniques for developing/documenting computer applications, including principles of structured programming, problem decomposition, program organization, the use of procedural abstraction and basic debugging skills.
204. COMPUTER PROGRAMMING (3). Pr., MH 151 or 161. Digital computer programming with emphasis on mathematical problems, using FORTRAN programming language. (Not open to students with credit in CSE 120.)
220. FUNDAMENTALS OF COMPUTER SCIENCE II (3). Pr., CSE 200. Continuation of CSE 200. Pointers and dynamic data structures; linked lists, queues, stacks, trees and graphs.
300. STRUCTURED PROGRAMMING FOR ENGINEERS AND SCIENTISTS (3). Fundamentals of structured programming principles, including top-down program design, program documentation, and advanced problem solving for engineering and scientific applications using a structured programming language. (Not open to students with credit in CSE 200.)
301. COBOL PROGRAMMING FOR INFORMATION SYSTEMS (3). Pr., one high-level language programming course. An introduction to business and information systems software design with the COBOL programming language.
324. DISCRETE STRUCTURES (3). Pr., MH 266. Sets, relations, functions, recurrence relations, propositional calculus, predicate calculus, boolean algebra, graph theory, introduction to monoids and formal language theory.
335. MICROCOMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING (4). LEC. 3, LAB. 3. Pr., EE 330. Stored program computers, hardware components, software components; data representation and number systems; instruction sets; addressing modes and assembly language programming; memory, memory cycles and memory hierarchy; arithmetic/logic unit; control unit, program counter and instruction cycle; input/output programming and interrupts. (Credit is not allowed for both EE 335 and CSE 335.)
350. MODERN COMPUTER METHODS FOR ENGINEERING (4). LEC. 3, LAB. 3. Pr., one structured programming language course. Introduction to recent developments in problem-solving tools and techniques using a computer workstation environment. A coordinated approach demonstrates the role of hardware and software tools for improving the quality and efficiency of programming efforts in all engineering disciplines.
360. FUNDAMENTAL ALGORITHM DESIGN AND ANALYSIS (3). Pr. CSE 220. Algorithm development using pseudo-languages; elementary program structures; classification of algorithms, e.g. recursive, divide-and-conquer, greedy; algebraic simplification and transformation; evaluation of polynomials; iteration; sorting; solving linear equations; basic search methods and backtracking.
400. SYSTEMS PROGRAMMING PRINCIPLES I (3). Pr., CSE 335. Coreq., CSE 360. Review of machine structure, machine language and assembly language; introduction to the design of assemblers, macro processors and loaders; overview of operating systems principles.
- 400L. SYSTEMS PROGRAMMING LABORATORY (1). Coreq., CSE 400. Design and implementation of an assembler, a macro processor or a binder/loader as a comprehensive project.
405. OPERATING SYSTEMS (3). Pr., CSE 400. Structure and functions of operating systems; process state models and scheduling algorithms; memory management; interrupt processing; auxiliary storage management; disk scheduling algorithms and file systems; resource allocation policies and deadlock; protection; concurrent asynchronous processes; design strategies.
412. DATABASE SYSTEMS I (3). Pr., CSE 360. An introduction to database systems; basic concepts, storage structures, data models and data sublanguages: relational, hierarchical and network models.
422. INTRODUCTION TO SOFTWARE ENGINEERING (3). LEC. 2, LAB. 3. Coreq., CSE 360. Tools and methodology for the design of complex software systems composed of integrated programs, data files and user interfaces.
490. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter.
498. HONORS THESIS (3-6). Pr., COI and department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (CSE Honors Program students only. May be repeated once for a maximum of six credit hours.)
499. SPECIAL PROJECTS (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter.

# ADVANCED UNDERGRADUATE AND GRADUATE COURSES

501. ADVANCED SCIENTIFIC COMPUTING (3). LEC. 2, LAB. 3. Pr., senior standing and knowledge of FORTRAN. Design and implementation of scientific and engineering applications using supercomputers. Emphasis is on the use of vectorization and loop-level parallelization to speed up large-scale numerical computations.
505. OPERATING SYSTEMS DESIGN PRINCIPLES (3). Pr., CSE 405 or EE 430. Design and implementation strategies used in operating systems software to manage system resources; design problems in implementing multiprocessing and dynamic management of memory; design solutions to synchronizing and communicating with processes; managing time; design techniques used to process various classes of interrupts and to schedule processors.
512. DATABASE SYSTEMS II (3). Pr., CSE 412. Database system architecture and design methodology, with emphasis on the relational model. Design and implementation of a comprehensive database system as a coordinated project.
518. PROGRAMMING LANGUAGE CONCEPTS (3). Pr., CSE 360. An evaluation of the major programming language paradigms, with emphasis on how language concepts affect design and implementation decisions. A variety of programming models and their implementation in programming languages are studied in order to illustrate language principles and to allow language comparisons.
520. THEORY OF FORMAL LANGUAGES I (3). Pr., EE 330. A detailed study of mathematical models of regular sets, context-free languages and Turing machines; deterministic and non-deterministic models, closure properties, normal forms, simplifications and applications.
521. COMPILER CONSTRUCTION (3). Pr., CSE 520. Compiler organization; lexical analysis; LL and LR grammars and deterministic parsing; syntax-directed translation; error detection and recovery; compiler generation tools.
- 521L. COMPILER CONSTRUCTION LABORATORY (1). Coreq., CSE 521. Design and implementation of a high-level language compiler as a comprehensive project.
522. SOFTWARE ENGINEERING I (4). LEC. 3, LAB. 3. Pr., CSE 422. Design of reliable software; error causes and consequences; requirements, specifications and objectives related to reliable design; software testing, test case design, test tools, path testing and transaction flows; data validation and syntax charts; programming languages and reliability, proving program correctness and reliability models.
523. ADVANCED PROGRAMMING IN ADA (3). Pr., senior standing or COI. Advanced topics in programming using Ada as an example of a language oriented toward software engineering applications; emphasis is placed on features for data abstraction, information hiding and software component libraries.
525. ADVANCED PROGRAMMING IN C (3). Pr., CSE 350 and senior standing or COI. Advanced topics in programming using C as an example of a machine-oriented high-level language; facilities for preprocessing, indirect data manipulations and operating system interfaces are emphasized.
526. DESIGN OF SOFTWARE FOR PARALLEL SYSTEMS (3). Pr., CSE 360 and senior standing. Parallel languages; the design and analysis of parallel algorithms; models of parallel computation; sorting; matrix multiplication, numerical and graph algorithms.
527. ADVANCED DESIGN AND ANALYSIS OF ALGORITHMS (3). Pr., CSE 360. Algorithm design theory; computational complexity; relationship of data structures to algorithm design; study of design strategies including divide-and-conquer, the greedy method, dynamic programming, basic search and traversal techniques, backtracking, branch-and-bound, algebraic simplification and transformations; lower bound theory; study of NP-hard and NP-complete problems.
530. DESIGN ISSUES IN COMPUTER ARCHITECTURES (3). Pr., CSE 405 or EE 430. Formal comparison of computer architectures, emphasizing the interface between hardware and software. Includes functional requirements analysis; memory systems design; pipeline design; instruction set design; and quantitative evaluation of computer performance.
532. COMPUTER NETWORKS (3). Pr., CSE 405 or EE 430. Introduction to distributed systems, network architectures, protocols, digital communication links, data management and related software design. (Credit is not allowed for both EE 532 and CSE 532.)
533. PARALLEL PROCESSING (3). Pr., CSE 530 or EE 530. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines and data flow architectures; design principles related to machine structures, control software and hardware, data storage and access, programming languages and application algorithms. (Credit is not allowed for both EE 533 and CSE 533.)
534. DISTRIBUTED COMPUTING (3). Pr., CSE 530 or EE 530. Overview of distributed data processing concepts; hardware architectures and configurations; systems and application software design; problem design; interprocess communication; system performance evaluation; fault tolerance. Decentralized control, distributed operating systems and distributed databases.
540. FUNDAMENTALS OF COMPUTER GRAPHICS SYSTEMS (3). LEC. 2, LAB. 3. Pr., CSE 220. Hardware and software components of computer graphics systems; display files, two-dimensional and three-dimensional transformations, clipping and windowing, perspective, hidden-line elimination and shading; interactive graphics; survey of applications.
560. ARTIFICIAL INTELLIGENCE I (4). LEC. 3, LAB. 3. Pr., CSE 360 or COI. Introduction to machine intelligence; computer vision; search; logic and deduction; abduction, uncertainty and expert systems.
561. ARTIFICIAL INTELLIGENCE II (3). Pr., CSE 560. Introduction to natural language understanding, managing plans of action, language comprehension and machine learning.
562. LOGIC PROGRAMMING (3). Pr., CSE 324 or COI. Introduction to logic programming through representation, style, data structures, program verification and implementation using Prolog.

## Consumer Affairs

- 571-572. SENIOR DESIGN PROJECT (3-2). Pr., CSE 422 and senior standing. Development of requirement definitions, architectural design specification, detailed design specification, testing plan and documentation for the software and/or hardware components of a comprehensive project.
580. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter.

## Consumer Affairs

Professors McCord, Trentham and Warfield, *Head*

Associate Professors Anderson, Barry, Hardin and Staten

Assistant Professors Aycock, Brannon, Cavender, Christman, Clem, Kincade and Potter

Instructor Bunn

115. CLOTHING AND CULTURE (3). Cultural, aesthetic, functional and technological factors as they interact to determine the meaning and use of clothing and textiles for the individual and society.
116. ART FOR LIVING (3). A working knowledge of basic concepts in the organization and evaluation of design with emphasis placed upon the contribution of design and color as enrichment of individual and family environment.
- 116L. ART FOR LIVING LABORATORY (2). LAB. 4. Pr., CA 116 or concurrently. Provides the opportunity for individuals to explore color and design concepts through the manipulation of materials, tools and processes and to obtain design evaluation experience.
121. SPATIAL ANALYSIS (3). STUDIO 8. Pr., CA 116 and CA 116L. Principles and elements of three-dimensional design, with particular application to the built environment. Perceptual awareness and communication skills are emphasized through experiences in various design and communication media. Abstract and representational models are used in spatial design problem analysis.
140. APPAREL PRODUCTION I (4). LEC. 3, LAB. 3. Pr., CA 115. Introduction to the apparel industry, apparel production methods and terminology.
201. RETAIL PRICING (3). Pr., MH 140. Basic understanding and application of pricing principles involved in operating a retail establishment.
205. TEXTILE AND APPAREL PRODUCTS: MERCHANDISING AND CONSUMPTION (3). Pr., CA 115, CA 116, CA 116L or equivalent. Emphasis on textile and apparel products and the principles that guide consumption aspects as related to individuals at all stages of the life cycle.
206. GARMENT STRUCTURES — THEORY AND APPLICATION (3). Pr., CA 140. Coreq., CA 206L. Introduction to basic pattern making and advanced construction methods. A grade of C or higher must be attained in CA 206 to advance to CA 505 or 555.
- 206L. GARMENT STRUCTURES LABORATORY (2). Pr., CA 140. Coreq. CA 206. Provides the opportunity to explore basic pattern making methods and advanced construction techniques. A grade of C or higher must be attained in CA 206L to advance to CA 505 or 555.
215. SURVEY OF THE DECORATIVE ARTS (5). Historical and stylistic development of the decorative arts, including furniture and other interior decorative objects.
216. ART FOR LIVING II (3-5). (3) LEC. 2, LAB. 2. (5) LEC. 2, LAB. 6. Pr., CA 116, 116L or equivalent. A continuation of the individual's artistic environment with emphasis on the application of principles of design and color to specific problems of everyday life.
220. CONSUMER HOUSING (3). Investigation of factors affecting consumer housing choices.
221. RESIDENTIAL SPACE PLANNING (4). LEC. 2, STUDIO 6. Pr., CA 220. Analysis and development of residential space design. Survey of residential building materials, systems and operations. Introduction to design communication using two-dimensional drawings, schedules and specifications.
222. FURNISHINGS FOR INTERIORS (4). Pr., CA 116 or equivalent. Introduction to the functional and aesthetic aspects of furnishing residential spaces. An application of principles of color and design in furnishings plans. Overview of decorative and functional materials and components.
223. INTERIORS (4). LEC. 2, LAB. 6. Pr., CA 121, 221, 222, 255, BSC 200. Fundamentals of the design process for interior space. Methods of establishing design programming and conceptualization from data gathering and problem solving techniques. Organization of the design presentation.
224. FUNDAMENTALS OF VISUAL PRESENTATION (2). STUDIO 6. Pr., BSC 200. Introduction to basic skills, materials and techniques employed in the visual and verbal presentation of interior furnishings designs.
226. FASHION SKETCHING (3). LAB. 6. Pr., CA 116, 116L or equivalent. Provides for the fashion merchandising or apparel design major simple methods of communicating apparel designs through quick sketches to portray fashion in silhouettes, texture and color.
233. RESIDENTIAL EQUIPMENT/ENERGY MANAGEMENT (4). LEC. 3, LAB. 3. Pr., completion of university core science sequence. Products design standards and energy utilization of major appliances.
240. APPAREL PATTERN GRADING (3). LEC. 1, LAB. 4. Pr., CA 140. Practical application of apparel pattern grading techniques, size ranges and primary methods of pattern grading.
255. TEXTILES FOR INTERIORS (3). Pr., CA 115 or COI. Fibers, yarns, fabrics and finishes of textile products with emphasis in their application to interiors. Credit will not be allowed for both CA 305 and CA 255.
305. TEXTILES (5). Pr., CH 203. Polymers, fibers, yarns, fabrics and finishes in their relationship to apparel and household textiles. Credit will not be allowed for both CA 305 and CA 255.
316. FASHION ANALYSIS (5). Pr., CA 205. The dynamic nature of fashion and the interacting forces which shape fashion trends in apparel.

324. ADVANCED VISUAL PRESENTATION (3). STUDIO 9. Pr., CA 222, 224. Advanced techniques and methods of color application to visual presentation of furnishings and interiors.
325. FASHION MERCHANDISING (5). Pr., MT 331, 333. Application of principles and practices of merchandising to the retailing of consumer goods and services.
333. LIGHTING DESIGN (5). LEC. 3, STUDIO 6. Pr., CA 224, 233 or COI. Application of functional and aesthetic concepts and techniques of lighting design. Evaluation of materials and controls, energy utilization, aesthetic quality. Lighting design layouts and specifications.
334. INTRODUCTION TO INTERNSHIP (2). Pr., junior standing or COI. Prepares students for maximum utilization of supervised professional internship.
340. APPAREL PRODUCTION II (5). LEC. 2, LAB. 6. Pr., CA 140, ACF 215. Coreq., CA 305. Planning and problem-solving throughout the apparel production process.
342. ANALYTICAL INSTRUMENTATION IN TEXTILES (3). LEC. 2, LAB. 2. Pr., all Basic Textile courses, TE 241. Use of specialized analytical instrumentation to assist in the production of textile products; as means to solve problems of color mixing, waste water characterization, dust measurement and the identification of materials. Systems control by instrumentation is also included.
353. BUSINESS PRACTICES IN INTERIOR FURNISHINGS (5). Pr., CA 223. Analysis of current developments in the interior furnishings business market. Professional practices within the business setting. Overview of furnishings merchandising, including purchasing, promotion and salesmanship. Estimation of interior decorative materials.
363. ENVIRONMENTAL SYSTEMS/ENERGY MANAGEMENT (3). LEC. 3. Pr., CA 233. Equipment and systems for interior environmental control.
395. APPAREL DESIGN (3). LEC. 1, LAB. 4. Pr., CA 206, 226. Principles of design, structure and production as they guide designing of apparel within the fashion and cultural context.
398. PROFESSIONAL PLANNING AND DEVELOPMENT (1). Pr., junior standing or COI. Professional development course designed to assist human sciences students in the transition from student to professional.
399. EXPERIENTIAL LEARNING (1-6). Pr., sophomore standing and COI.
422. KITCHEN AND BATH PLANNING (4). LEC. 2, STUDIO 6. Pr., CA 223, 324, 333, 363. Aesthetic and technical elements of kitchen and bath design.
423. RESIDENTIAL INTERIORS (4). LEC. 1, STUDIO 9. Pr., CA 215, 353 and 422. Creative development of residential interiors for specific clients focusing on the interrelationships of multiple interior spaces. Strategies used in planning furnishings as a component in the housing market. Introduction to the design team approach.
424. NON-RESIDENTIAL INTERIORS (4). LEC. 2, STUDIO 6. Pr., CA 324, 333. Coreq., CA 363. Analysis and development of non-residential interior spaces and application of human behavioral elements in the design process. CA 363 must be taken concurrently or prior to CA 424.
431. GLOBAL ENVIRONMENTAL ISSUES (3). Pr., senior standing. Relationship of higher education and the citizen to global issues that are environmental.
435. INTERNSHIP IN RETAILING (13). Pr., CA 325, 334. Ten weeks paid experience with a domestic or global firm in the textiles or apparel industry. Supervised professional experience to include product development, marketing, retailing or consumer relations.
436. INTERNSHIP IN INTERIORS AND HOUSING (13). Pr., senior standing; approval of internship application by IH faculty. Supervised professional internship in interiors and housing.
478. VISUAL MERCHANDISING (3). LEC. 2, LAB. 2. Pr., junior standing, CA 116 or equivalent, MT 331 or COI. Exploration of history, equipment, application and theory of display techniques. Emphasis is on displays in windows and interior store settings.
490. INDEPENDENT OR FIELD STUDY (1-8). An individual problems course involving directed readings and/or laboratory or field experiences under the direction of a faculty member on some problem of mutual interest. Field experiences may include work with families, business or industry.

#### ADVANCED UNDERGRADUATE AND GRADUATE

505. APPAREL DESIGN THROUGH DRAPING (5). LEC. 2, LAB. 9. Pr., CA 206 and 206L or equivalent with a grade of C or higher. Creative experience in development and execution of apparel designs through draping varied fabrics on individualized body structures. Exploration and application of theories, philosophies and practices of contemporary designers.
511. APPAREL DESIGN FOR SPECIAL NEEDS (2). Pr., CA 115, SY 201, PG 211 and junior standing. The physical, psychological and social facets of selecting, adapting and designing apparel for special needs of people.
- 511L. APPAREL DESIGN FOR SPECIAL NEEDS LABORATORY (2). LAB (4). Pr., CA 395 and junior standing. Coreq. CA 511. Concepts learned in CA 511 are applied to laboratory problems.
513. HOUSING FOR SPECIAL NEEDS (4). LEC. 4. Pr., CA 220, PG 211 or equivalent or COI. Examination of physical, social, economic and psychological needs of the elderly and handicapped in relation to their home and community environments. Emphasis on evaluation of housing alternatives for both groups.
514. SOCIAL PROBLEMS OF HOUSING (5). Pr., CA 220 or equivalent or COI. Current housing policies explored as both causes of and solutions to certain social problems. Zoning and exclusionary practices, public housing, cash subsidies for housing examined.
515. HISTORY OF TEXTILES (5). Pr., AT 171, 172, 173 or HY 101, 102, 103. The development of the textile industry and of fabric design from the earliest times to the present day.



## *Counseling and Counseling Psychology*

- 516. APPAREL QUALITY ANALYSIS (5). Pr., CA 140, 305 and 325 or equivalent and junior standing. Analysis of quality variations of soft goods and study of factors affecting quality of materials, manufacturing processes, markets and resources.
- 521. WORLD APPAREL, TRADE, PRODUCTION AND DISTRIBUTION (4). Pr., MT. 331 or COI. The large textile and apparel manufacturers who have units outside the U.S., foreign apparel companies who have plants in the U.S., international trade agreements and other factors which influence international trade in textiles and apparel.
- 523. GOVERNMENT AND THE RETAILER (5). Pr., junior standing, COI. Informative, statistical and regulatory aspects of governmental departments and agencies affecting textiles and clothing retail operations.
- 524. PLANNED CHANGE IN THE FASHION INDUSTRY (5). Pr., CA 325 or COI. The process involved in initiating and implementing change in the fashion industry.
- 525. HISTORY OF COSTUME (5). Pr., AT 171, 172, 173 or HY 101, 102, 103. Evolution of Western costume from prehistoric time to present day.
- 535. TEXTILE TESTING (5.) LEC. 2, LAB 6. Pr., CA 305 or equivalent. Standard testing procedures and equipment used in determining the physical and chemical characteristics of fibers, yarns and fabrics and of the statistical methods employed in data evaluation.
- 538. STUDY/TRAVEL IN CONSUMER AFFAIRS (2-8). Course may be repeated for a maximum of 12 undergraduate credits or eight graduate credits. Pr., junior standing, COI. Concentrated study in clothing, textiles, interiors and housing or merchandising in U.S. or foreign locations which offer unique resources for investigation in one of these content areas. Lectures presented at pre-arranged points. Papers required on selected phases of the course.
- 540. ADVANCED APPAREL PRODUCTION (5). LEC. 1, LAB. 8. Pr., CA 316, 340, 516, 535. Integration of the design, production and marketing of apparel utilizing a team approach and emphasizing decision-making skills.
- 555. APPAREL DESIGN THROUGH FLAT PATTERN (5). LEC. 2, LAB. 8. Pr., CA 206 and 206L or equivalent with a grade of C or higher and CA 395. Pattern blocking in pattern production. Foundation sloper developed for pattern drafting. Consideration given to figure variations and their effect on styling and production.
- 560. TEXTILE FINISHES (4). Pr., CA 305 or equivalent, junior standing. Chemistry and mechanics involved in finishing textile materials. Properties of finished fabrics related to end use.
- 560L. TEXTILE FINISHES LABORATORY (1). LAB. 3. Coreq. CA 560. Techniques of textile finishing. Analysis and evaluation of finishes.
- 580. PROBLEMS IN DESIGN. A. CLOTHING; B. TEXTILE DESIGN; C. CLOTHING AND TEXTILE DESIGN; D. INTERIORS AND HOUSING (3-5). LEC. 1, LAB. 9-12. Pr., for A, CA 505 and 555; for B, C and D, foundation courses in the field, COI. Creative work integrating methods, materials and processes in solution of specified design problems. May be repeated and combined for a maximum of 10 hours.
- 581. INTERNSHIP IN THE APPAREL INDUSTRY (13). Pr., CA 334, 540 or 580 and approval of internship supervisor. Supervised professional experience in apparel design and/or production.

NOTE: The Textile Design Option of the Apparel and Textiles program is temporarily suspended. Seven courses unique to this option have been temporarily removed from this course listing: CA 345, 385, 575, 576, 586, 587, 588.

## **Counseling and Counseling Psychology (CCP)**

Professors Meadows, Head, Donnan and Moracco  
Associate Professors Buckhalt, Byrd, Pipes and Westefeld  
Assistant Professors Cobia and Short

Prerequisites and corequisites in the Department of Counseling and Counseling Psychology are experience in appropriate fields and employment or professional objectives leading to employment in public school counseling, psychoeducational diagnosis (school psychometry), rehabilitation counseling, community agency counseling, counselor education, college student personnel work or counseling psychology. CCP 621, 622 or equivalent, is a prerequisite or corequisite to advanced study.

- 101. CAREER EXPLORATION AND PLANNING (2). Helps undeclared freshmen in planning careers.
- 223. HUMAN RELATIONS TRAINING FOR THE HEALTH PROFESSIONS (2). Human relations skills for health care providers; study and practice of the communication process with individuals and in small groups. Limited to students in the health professions.
- 321. LEADERSHIP IN STUDENT DEVELOPMENT (3). Pr., sophomore standing and COI. For students interested in increasing their understanding and skills in group dynamics and leadership. Particular attention will be paid to application of course content and activities to current co-curricular programs in which students are involved.
- 322. HUMAN RELATIONS TRAINING IN TEACHER EDUCATION (2). Students are trained in facilitative communication skills which would lead to (1) a deeper understanding of students and the learning process; (2) a more positive working relationship with peers; (3) more efficient methods of classroom management and conflict resolution; and (4) more effective use of support personnel in the school system.



## ADVANCED UNDERGRADUATE AND GRADUATE

521. COUNSELING AND HUMAN SERVICES (4). Counseling concepts and skills appropriate in the helping professions. Not open to graduate students in Counselor Education.
522. INTRODUCTION TO COUNSELING THE EXCEPTIONAL INDIVIDUAL (4). Pr., CCP 322. Development of interpersonal relationship skills for persons interested in working with the disabled-physical, mental, social or mental retardation. Emphasis upon unique aspects of these skills to the handicapped.
523. MEDICAL ASPECTS OF DISABILITY (3). Pr., COI. Orientation to medical aspects of the disabled individual. Understanding and working cooperatively with medical personnel effectively in the rehabilitation process.
524. COMMUNITY RESOURCES IN REHABILITATION (3). The utilization of community resources in furthering the rehabilitation of the disabled individual; the vocational rehabilitation worker as a referral source; and the utilization of those in the community in a coordinated approach to total rehabilitation of the individual.
525. ADJUSTMENT ASPECTS OF DISABILITY (3). Psychological and social variables associated with adjustment to disability.

## Curriculum and Teaching (CT)

Professors Weaver, Head, Cadenhead, Easterday, Graves, Lay,  
Rowsey and Silvern

Associate Professors Baird, Johnson, Melvin, Noland, Taylor,  
Wright, von Eschenbach and Williamson

Assistant Professors Ash, Barry, Klier, Villalume and Worden

Areas of Specialization: Early Childhood Education, Elementary Education, English Language Arts Education, Foreign Language Education, Mathematics Education, Music Education, Reading Education, Science Education, Social Science Education.

## EARLY CHILDHOOD EDUCATION (CTC)

102. ORIENTATION (1). Helps new students and transfers from other curricula to understand teacher education and teaching as a profession.
301. THE CHILD'S CONSTRUCTION OF SOCIAL COGNITION (3). Examination of constructivist theory and research related to the development of social cognition and pro-social behavior.
302. THE CHILD'S CONSTRUCTION OF NUMBER (3). Examination of constructivist theory and research related to the development of mathematical and physical knowledge.
303. THE CHILD'S CONSTRUCTION OF THE SYMBOLIC FUNCTION (4). Examination of constructivist theory and research related to the development of symbolic function and representational forms.
315. LANGUAGE DEVELOPMENT: IMPLICATIONS FOR THE CHILDHOOD EDUCATOR (4). Applications of language development theories to teaching children. Emphasis on effects theories have on curriculum and teaching.
320. A WORKING THEORY FOR THE CONSTRUCTIVIST EDUCATOR (3). Pr., FED 300 or equivalent, admission to Teacher Education. Designed for pre-service teachers preparing to teach at the pre-school and primary school levels. Students build knowledge of constructivist theory.
321. THE NATURE OF THE LEARNER IN EARLY CHILDHOOD CLASSROOMS (3). Pr., CTC 320. Designed for pre-service teachers preparing to teach at the pre-school and primary school levels. Students build knowledge of how young children interact with the realms of knowledge evident in the early childhood classroom environment.
355. SURVEY OF EARLY CHILDHOOD EDUCATION (3). Survey of the teaching profession, the nature of programmatic variation at the early childhood level.
420. THE CONSTRUCTIVIST TEACHER: STRATEGIES AND TECHNIQUES (3). Pr., CTC 321. Coreq., CTC 495. Designed for pre-service teachers preparing to teach at the pre-school, kindergarten and/or primary school levels. Students build a working knowledge of established constructivist curriculum strategies and techniques, as well as a set of guidelines on which to base wise curriculum decision-making.
421. THE CONSTRUCTIVIST TEACHER: GROWING PROFESSIONALLY (3). Pr., CTC 321. Coreq., CTC 495. Designed for pre-service teachers preparing to teach at the pre-school, kindergarten and/or primary school levels. Students build a working knowledge of the roles and responsibilities of an early childhood teacher.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods designed to provide positive evaluation and analysis of the Intern experience.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
450. SPECIAL TOPICS (1-5). Students and professors pursue cooperatively selected concepts and theoretical formulations, normally in small groups.
488. READINGS FOR HONORS (1-10). Individual readings program for students in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.

495. PRACTICUM (1-10). Provides experiences closely relating theory and practice, usually carried on simultaneously.

## ELEMENTARY EDUCATION (CTE)

Programs in Elementary Education lead to certification in grades 1-6. Endorsements for Middle School certification, grades 4-8, in certain specific teaching fields are also available.

102. ORIENTATION (1). Helps new students and transfers from other curricula to understand teacher education and teaching as a profession.
302. CURRICULUM I, LANGUAGE ARTS (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
303. CURRICULUM I, SOCIAL SCIENCE (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
402. CURRICULUM II, MATHEMATICS (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
403. CURRICULUM II, NATURAL SCIENCE (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods designed to provide positive evaluation and analysis of the intern experience.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations.
451. ANALYSIS OF ELEMENTARY INSTRUCTIONAL STRATEGIES (3). LEC. 4, LAB. 2. Pr., professional Internship. Patterns of elementary curriculum and organization for instruction, including the analysis of previous and current laboratory experiences in education. Attention given to implementation of systems approach in student's area of specialization.
488. READINGS FOR HONORS (1-10). Individual readings program for students in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
495. PRACTICUM (1-10). Provides experiences closely relating theory and practice, usually carried on simultaneously.

## ENGLISH LANGUAGE ARTS EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

## FOREIGN LANGUAGE EDUCATION

(See Secondary Education [CTS]).

## MATHEMATICS EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

## MIDDLE SCHOOL EDUCATION (CTD)

401. TEACHING MATHEMATICS: MIDDLE SCHOOL (4). LEC. 3, LAB. 2. Pr., FED 300 and COI. Specific teaching strategies for a comprehensive middle school mathematics program.
419. THE MIDDLE SCHOOL (5). LEC. 4, LAB. 3. Pr., FED 300, admission to Teacher Education, junior standing. Historical perspective and rationale for the development of the middle school program. Analysis of middle school organization and selected programs. Laboratory experiences are required.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Supervised teaching in a school, accompanied by scheduled discussions designed to analyze and evaluate the intern's experience.
446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry, including evaluation by professor and student at regular intervals.
450. SPECIAL TOPICS (1-5). Cooperative pursuit of selected concepts and theories, normally in small groups.
495. PRACTICUM (1-10). Experiences designed to allow individual students to relate theory and practice.

## MUSIC EDUCATION (CTM)

Students majoring in music education must demonstrate functional keyboard skills appropriate to their chosen area of concentration. The keyboard proficiency examination is taken prior to enrollment in any CTM course. Additional degree requirements are available from the Dean of Education.

102. ORIENTATION (1). Helps students to understand teacher education and teaching as a profession as well as become acquainted with the preparation program in music education.

- 304. MUSIC AND RELATED ARTS (3-5). Pr., MU 371 or equivalent. Musical, rhythmic and artistic activity program in the context of laboratory experiences with children.
- 394. TEACHING ELEMENTARY INSTRUMENTAL MUSIC (3). LEC. 2, LAB. 2. Pr., six hours of class instruments. Methodology, materials and organization for beginning instrumental music programs; includes laboratory experiences with children.
- 398. EARLY CHILDHOOD AND ELEMENTARY MUSIC PROGRAMS (3). LEC. 2, LAB. 2. Pr., CTM 304 or COI. Methodology, materials and activities for music programs in grades N-8; includes laboratory experiences with children.
- 425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods designed to provide positive evaluation and analysis of the Intern experience.
- 446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry including evaluation by professor and student at regular intervals.
- 450. SPECIAL TOPICS IN MUSIC EDUCATION (1-5). Cooperative pursuit of selected concepts and theories. May be repeated not to exceed six hours.
- 488. READINGS FOR HONORS (1-10). Individual readings program for students in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
- 489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
- 495. PRACTICUM (1-10). Experiences designed to allow individual students to relate theory to practice.

### ADVANCED UNDERGRADUATE AND GRADUATE

- 583. MATERIALS AND ORGANIZATION OF SCHOOL ORCHESTRAS (3). Pr., COI. Administrative procedures, instructional strategies and materials for intermediate and advanced school orchestra programs.
- 594. MATERIALS AND ORGANIZATION OF SCHOOL BANDS (3). Pr., COI. Administrative procedures, instructional strategies and materials for intermediate and advanced school band programs.
- 595. MATERIALS AND ORGANIZATION OF SCHOOL CHOIRS (3). Pr., COI. Administrative procedures, instructional strategies and materials for school choral programs.
- 596. CURRENT TRENDS IN EARLY CHILDHOOD AND ELEMENTARY MUSIC (4). Pr., CTM 396 or COI. Advanced study and evaluation of skills, techniques, materials, theories and trends in music teaching.
- 597. MATERIALS AND ORGANIZATION OF GENERAL MUSIC PROGRAMS (4). Pr., CTM 396 or COI. Scope and sequence of school general music programs with emphasis on materials and methodologies for post-elementary programs.

### READING EDUCATION (CTR)

- 201. COLLEGE READING AND STUDY SKILLS (3). LEC. 2, LAB. 2. General elective. Comprehension skills for college students, including classroom performance skills, reading efficiency techniques, vocabulary development and study skills. Students will utilize own content area textbooks.
- 370. FUNDAMENTALS OF READING INSTRUCTION I (5). LEC. 3, LAB. 4. Pr., FED 300 and junior standing. Develops competencies in the teaching of reading. Introduces student to the basic aspects of teaching reading. Fundamental constructs considered are readiness, informal diagnosis, reading skills, planning, approaches, enjoyment of reading, learners with special needs. Laboratory experiences with children.
- 371. FUNDAMENTALS OF READING INSTRUCTION II (5). LEC. 3, LAB. 4. Pr., CTR 370 or COI. Builds on CTR 370 in developing competencies in the teaching of reading. Topics include word recognition, comprehension and study skills (teaching level); the basal reader and individualized approaches; lesson planning; diagnostic teaching of reading. Commercial materials are evaluated and teacher-made materials are produced. Laboratory experiences with children.
- 448. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry, including evaluation by professor and student at regular intervals.
- 450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations, normally in small groups.

### ADVANCED UNDERGRADUATE AND GRADUATE

- 570. READING IN THE CONTENT AREAS OF THE ELEMENTARY SCHOOL (5). LEC. 3, LAB. 4. Pr., CTR 370 and junior standing. Develops competencies in teaching functional reading in the elementary school. Directed reading activities, specialized skills and study skills stressed.
- 571. READING IN THE CONTENT AREAS OF THE SECONDARY SCHOOL (5). Pr., admission to Teacher Education. Reading problems in content areas of the secondary school and special methods of helping students overcome these problems.
- 578. THE READING OF ADOLESCENTS (5). Pr., CTR 571 or COI. Use of adolescent and popular adult literature in the secondary school reading program. Motivation of the reluctant reader; criteria for evaluating reading materials; and self-selection/self-pacing reading programs in the English or reading classroom.

### SCIENCE EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

## SECONDARY EDUCATION (CTS)

Undergraduate students must select two teaching majors unless they select the composite majors offered in English Language Arts, Mathematics, General Science and Social Science. These programs lead to certification at the high school level, grades 7-12. Endorsements for certification at the Middle School level, grades 4-8 are also available, as is specific certification at only the Middle School level.

For some courses, there are special sections denoted by a letter code corresponding to the areas of specialization. These areas are: (D) Foreign Language, (G) English, (H) Mathematics, (K) Science and (L) Social Science.

102. ORIENTATION (1). Helps new students and transfers from other curricula to understand teacher education and teaching as a profession.
- 110-111-112. DEVELOPMENTAL STUDIES I, II, III (2). (CREDIT NOT COUNTED TOWARD GRADUATION.) Designed to develop skills conducive to successful college study. Emphasis on reading skills and their relation to other language arts. Attention is given to study skills, communication skills for formal and informal use and cultural aspects of communication.
201. EDUCATION (2). Designed to help prospective teachers in the guidance of students. (A) Art Expression, (J) Music Experiences, (Q) Materials of Instruction.
- 201L. EDUCATION (1). LAB. 2. Laboratory will be taken concurrently with the corresponding lecture course or independent of the lecture.
204. FUNDAMENTALS OF COMPUTER PROGRAMMING. (3). Pr., MH 162 and COI. Introduction to microcomputers and computer programming with emphasis on solution of mathematical problems using BASIC. String variables and Introduction to graphics are included.
205. PROBLEMS IN COMMUNICATION (3). LEC. 2, LAB. 2. Language usually taught in the secondary English classrooms with special attention to questioning techniques, student/teacher interaction, standard/non-standard English, semantics and oral/written English.
375. SCIENCE FICTION IN THE SECONDARY SCHOOL PROGRAM (5). Selected works of science fiction with emphasis on the use of this genre to augment the teaching in the content areas of the secondary school curriculum.
400. APPLIED LINGUISTICS FOR FOREIGN LANGUAGE TEACHERS (3). The application of linguistics in the teaching of foreign languages.
401. TECHNOLOGY IN SCIENCE EDUCATION (3). LEC. 2, LAB. 2. Pr., EM 200 and admission to Teacher Education. Computer hardware and software for effective science teaching.
402. MATHEMATICS PROGRAM AND TEACHING I (3). LEC. 2, LAB. 2. Emphases are diagnostic and prescriptive procedures, theories of learning applied to managing and evaluating mathematics programs.
403. MATHEMATICS PROGRAM AND TEACHING II (3). LEC. 2, LAB. 2. Emphases are historical bases for school mathematics programs, planning, procedures, instructional strategies and teaching of problem solving.
404. TEACHING MATHEMATICS: APPLICATION AND TECHNOLOGY (3). LEC. 2, LAB. 2. Uses of calculators and computers in school mathematics and the teaching of applications in mathematics. For math education majors (composite program) who have completed appropriate math/computer science requirements.

Each of the following two courses, CTS 405 and 410, is sectioned as follows: (D) Foreign Language, (K) Science, (L) Social Science and (U) Journalism.

405. TEACHING IN SECONDARY SCHOOL (3). LEC. 2, LAB. 2. Pr., FED 350 or COI. 410L is a prerequisite for 405L.
410. PROGRAM IN SECONDARY SCHOOL (3). LEC. 2, LAB. 2. Pr., FED 350 or COI. 410L is a prerequisite for 405L.
411. TEACHING ENGLISH: LANGUAGE AND LINGUISTICS (3). LEC. 2, LAB. 2. Pr., FED 350 or COI. Specific teaching strategies in language and linguistics.
412. TEACHING ENGLISH: LITERATURE (3). LEC. 2, LAB. 2. Pr., FED 350 or COI. Specific teaching strategies in literature.
413. TEACHING ENGLISH: RHETORIC AND COMPOSITION (3). LEC. 2, LAB. 2. Pr., FED 350 or COI. Specific teaching strategies in rhetoric and composition.
415. CURRENT TRENDS AND PRACTICES IN AREAS OF SPECIALIZATION (3). LEC. 2, LAB. 2. Pr., FED 350 or COI. The study and application of contemporary curriculum and instructional trends and practices within the areas of specialization of the secondary school program.
420. THE SECONDARY SCHOOL (5). Current thinking about the organization and purpose of secondary schools.
421. SOCIAL SCIENCE CONCEPTS AND METHODS (5). Pr., 25 hours in social sciences. The structure, key concepts and methods of investigation of the social sciences. Emphasis is placed on those social sciences taught in secondary schools.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Supervised teaching in a school, accompanied by scheduled discussions designed to analyze and evaluate the intern's experience.
446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry, including evaluation by professor and student at regular intervals.
450. SPECIAL TOPICS (1-5). Cooperative pursuit of selected concepts and theories, normally in small groups.

488. READINGS FOR HONORS (1-10). Individual readings program for student in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
495. PRACTICUM (1-10). Experiences designed to allow individual students to relate theory and practice.

#### ADVANCED UNDERGRADUATE AND GRADUATE

501. LANGUAGE STUDY FOR TEACHERS (5). Linguistics in the school curriculum; the child's acquisition of syntax; theories of teaching usage, dialectology, lexicography and grammar; English as a second language, non-verbal communication in the classroom; research studies in language and linguistics and their applications to classroom teaching.
502. RHETORIC AND COMPOSITION FOR TEACHERS (5). Topics and current trends in teaching rhetoric and composition. Classical and new rhetorics; theories of paragraph analysis; behavioral approaches to composition; pupil motivation and the composing process; current research; evaluation.

#### SOCIAL SCIENCE EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

#### Economics (EC)

Professors Hebert, Head, Ekelund, Jackson, Jones, Kaserman, Long, Street, Whitten and Yeager

Associate Professors Ault, Barnett, Caudill, Garrison, Saba and Thompson

Assistant Professors Beard, Bell, Gropper, Raymond and Thornton

Effective Fall Quarter 1990, a 2.0 GPA will be required for enrollment in any Business course at the 300-level and above. This rule will apply to both Business and non-Business students.

200. ECONOMICS I (5). Pr., sophomore standing. Economic principles with emphasis upon the macroeconomic aspects of the national economy. (Credit not allowed for this course and AEC 200.)
202. ECONOMICS II (5). Pr., sophomore standing. Economic principles with emphasis upon microeconomic aspects of the economy. (Credit not allowed for this course and AEC 202.)
206. SOCIO-ECONOMIC FOUNDATIONS OF CONTEMPORARY AMERICA (3). The social and economic developments which promote an understanding of present day American society. (Credit not allowed for this course and EC 202.)
301. ECONOMIC PRINCIPLES AND BUSINESS POLICY (5). An accelerated course in economic principles combining key topics from EC 200 and 202. Offered for business minors only. (Credit not allowed for this course and EC 200 or 202. This course will not count as credit for any economics major).
340. ENVIRONMENTAL ECONOMICS (5). Pr., EC 202 or COI. Economic analysis applied to topical environmental issues such as pollution, preservation vs. development, economic growth and population.
350. LABOR ECONOMICS (5). Pr., EC 202, junior standing. A theoretical and institutional examination of the labor market, including wage theories, unionism, the economics of collective bargaining and income security.
360. MONEY AND BANKING (5). Pr., EC 200 or AEC 200, junior standing. Money, credit and banking including consideration of monetary systems, foreign exchange and commercial banking with relation to the Federal Reserve System.
400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by faculty committee.
433. LAW AND ECONOMICS (5). Pr., EC 202 or COI and junior standing. A description of the many substantive areas in which law has an economic foundation and an analysis of the ways in which law affects economic relations.
470. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
471. GOVERNMENT, BUSINESS AND SOCIETY (5). Pr., EC 202 and junior standing. Economic role of government in a free enterprise economy. Emphasis on the application of microeconomic theory to public policy issues.
490. SPECIAL PROBLEMS (1-10). Pr., COI, junior standing. May be repeated. Investigation and research into economic problems of special interest to the student and instructor.

#### ADVANCED UNDERGRADUATE AND GRADUATE

551. INTERMEDIATE MICROECONOMICS (5). Pr., EC 202 and junior standing. The theory of pricing under various market conditions and distribution of income among the factors of production.
552. COMPARATIVE ECONOMIC SYSTEMS (5). Pr., EC 202 and junior standing. An analysis of the rival economic doctrines of Capitalism, Socialism and Communism.
553. ECONOMICS OF GROWTH AND DEVELOPMENT (DESARROLLO ECONOMICO) (5). Pr., EC 200 and junior standing, taught in English or Spanish. Concepts, principles and problems of economic growth and development with consideration of appropriate policies for both underdeveloped and advanced economies.
554. HISTORY OF ECONOMIC THOUGHT (5). Pr., EC 202 and junior standing. The development of economic ideas, principles and systems of analysis from early times to the present.



## *Educational Foundations, Leadership and Technology*

555. **INDUSTRIAL ORGANIZATION (5).** Pr., EC 202 and Junior standing. The relationship of market structure to the pricing behavior of business and industry. Selected topics: regulation, research and development and technological change.
556. **INTERMEDIATE MACROECONOMICS (5).** Pr., EC 202 and Junior standing. The measurement of national output, income and employment theory, general equilibrium theory and theories of interest, investment and consumption.
557. **ECONOMIC HISTORY OF EUROPE (5).** Pr., EC 200 and Junior standing. An analysis of the development of the European economy and the resulting impact on the United States and the world.
558. **ECONOMIC HISTORY OF THE UNITED STATES (5)** Pr., Junior standing. The evolution of the American economy from European origins to the present.
559. **REGIONAL ECONOMIC DEVELOPMENT (5).** Pr., EC 200 and Junior standing. Analytical discussion of the principles associated with the regional development of a national economy. Emphasis is on the problems of lagging regions and on the experience of the United States.
562. **INTERMEDIATE MONETARY THEORY AND POLICY (5).** Pr., EC 360 and Junior standing. Attention given to theoretical and empirical studies. Readings from original sources required.
565. **PUBLIC FINANCE (5).** Pr., EC 202 and Junior standing. An examination of the economic rationale of the public sector; supply and demand of public goods. Principles of efficient and equitable taxation and government spending.
568. **BUSINESS HISTORY OF THE UNITED STATES (5).** Pr., Junior standing. The origins and developmental patterns of American business with an emphasis on the role of the business community in the economic and political evolution of the United States.
571. **INTERNATIONAL ECONOMICS (5).** EC 200, 202 and Junior standing. An examination of the pure theory and monetary aspects of international trade.
580. **BUSINESS AND ECONOMIC FORECASTING (5).** Pr., EC 200, 202 and MN 301 or COI and Junior standing. Forecasting, with emphasis on the interpretation of macroeconomic forecasting methods and the development of competency in forecasting at the level of the firm.

### **Educational Foundations, Leadership and Technology (EFLT)**

Professors Gorrell, Head, Blackburn, Burkhalter, G.M. Halpin, G.W. Halpin,  
Kunkel, Lauderdale, Morgan, Nist and Trentham  
Associate Professors Deaton, Kaminsky, Ledford, Miller, Spencer and Wright  
Assistant Professors Bannon, Brown, Lechner, Rinehart, Rucinski,  
Shannon, Short and Twale

### **EDUCATIONAL LEADERSHIP (EDL)**

Prerequisites and corequisites in the department of educational leadership are experience in teaching or appropriate fields and employment or definite professional objectives leading to employment in administration or supervision.

401. **ORGANIZATION AND SUPPORT OF PUBLIC EDUCATION (2).** The organization, administration and financing of American public education.

### **EDUCATIONAL MEDIA (EM)**

The program in educational media provides for certification at the A level and AA level for media specialists. Many courses are open to graduate level majors in other program areas of the college and the university.

The Instructional Design program emphasizes the application of instructional design technology, including computers, into the learning process. These courses are open to training directors in industry, business and the military as well as specialists in education.

200. **EDUCATIONAL MEDIA (2).** LAB. (4). Basic principles of library/media center usage includes audiovisual equipment operation, production of basic AV materials, retrieval and utilization of library materials and selected basic skills of instructional design.
370. **MICROCOMPUTER CONCEPTS AND APPLICATIONS IN EDUCATION (4).** LEC. 3, LAB. 2. Introduction to microcomputer uses in education.

### **ADVANCED UNDERGRADUATE AND GRADUATE**

510. **MEDIA FOR CHILDREN (4).** Pr., Junior standing. Examination and evaluation of print and other types of materials in view of their relevance to the needs and interests of various age and grade levels of elementary school children. Study of selection aids, principles and criteria for selecting materials.
530. **REFERENCE MATERIALS AND SERVICES (4).** Pr., Junior standing. Study and evaluation of basic reference sources for learning resources centers. Introduction to research methods needed in locating information to support the curriculum of the school.

550. CLASSIFICATION AND CATALOGING OF MEDIA (4). Pr., junior standing. Principles and procedures of classifying and cataloging books and other printed materials, filmstrips, recordings and community resources. The vertical file, the Dewey decimal system of classification, Wilson and Library of Congress printed cards and subject headings are studied.
570. THE MICROCOMPUTER AS AN EDUCATIONAL MEDIUM (4). LEC. 3, LAB. 2. Pr., junior standing. Applications of microcomputers in education for instruction and administration, present and future.

### FOUNDATIONS OF EDUCATION (FED)

213. HUMAN GROWTH AND DEVELOPMENT (5). LEC. 4, LAB. 2. Pr., sophomore standing. Teacher and the school in the direction, measurement and evaluation of individual growth and development by using various sociological, philosophical and psychological theories. Laboratory experiences required.
214. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (5). LEC. 4, LAB. 2. Pr., sophomore standing. The psychological dimensions of the educational process. The processes, conditions and evaluation of learning and related methodologies of teaching. Laboratory experiences and evaluation of the Pre-teaching Field Experience. For description of the Pre-teaching Field Experience Program, see Professional Requirements, Sect. C under College of Education.
270. INTRODUCTION TO STATISTICAL ANALYSIS IN THE HUMAN SCIENCES (3). LEC. 3. Pr., MH 140 or 160. The fundamentals of research design and analysis in nursing, education and related human sciences. Practical experience in the application of the binomial, normal curve, Poisson and Chi-square distribution functions in research design. Required in Professional Nursing Curriculum. Non-nursing students must have COI.
300. EDUCATIONAL PSYCHOLOGY (5). LEC. 4, LAB. 2. Pr., sophomore standing. Learning and motivation from a developmental perspective for the purpose of gaining insight into an understanding of the learning process and of the individual involved in this process. This experience provides an integrated theoretical base for educational practice. Enrollment limited to education majors.
320. SOCIAL FOUNDATIONS OF EDUCATION (5). LEC. 4, LAB. 2. Pr., junior standing. The relationship of the school and contemporary society and the influence of cultural heterogeneity upon the teaching-learning process. Laboratory experiences focus upon mastering basic tools for studying the school as a dynamic social system.
350. CULTURAL FOUNDATIONS OF EDUCATION (5). LEC. 4, LAB. 2. Pr., junior standing. Analysis of education giving emphasis to the act of teaching both in theory and practice. Regardless of disciplinary emphasis, the concerns of educational purpose, curriculum and pedagogy will be the focus of the courses. Students will select one of the following disciplinary options: (a) philosophy of education, (b) history of education, (c) social foundations of education, (d) comparative education. Enrollment limited to education majors.
400. MEASUREMENT AND EVALUATION IN EDUCATION (5). LEC. 4, LAB. 2. Pr., FED 300 or equivalent and junior standing. Measurement and evaluation as an integral part of the teaching-learning process. Focus is on (a) identifying and defining intended learning outcomes, (b) constructing or selecting tests and other evaluation instruments that are relevant to specified outcomes and (c) interpreting and using results in determining attainment of educational goals and improving learning and instruction. Enrollment limited to education majors.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
480. PHILOSOPHICAL FOUNDATIONS OF EDUCATION (5). Educational movements and ideas in Western culture which influence modern educational practices. Evaluation of laboratory experiences and the Professional Internship through philosophical analysis of educational concepts and problems.

### ADVANCED UNDERGRADUATE AND GRADUATE

520. EDUCATIONAL SOCIOLOGY (4-5). Pr., SY 201 or equivalent. The school as a social institution. Group interaction, formal and informal structure and organization and the relationship of education to other social institutions.
534. PERSONALITY DYNAMICS AND EFFECTIVE BEHAVIOR (4-5). Pr., 10 hours of psychology. Analysis of adaptive and maladaptive behavior. Not open to students majoring in psychology.

### Electrical Engineering (EE)

Professors Irwin, Head, Lowry, Shumpert and Tugnait

Georgia Power Professor Grigsby

University Professor Jaeger

Associate Professors T. Baginski, Greene, Nelson, Rao, Riggs and Rogers

Alumni Associate Professor Tzeng

Square-D Associate Professor Gross

Assistant Professors M. Baginski, Beaty, Ding, Gordon, Hodel, Hopkins, J. Hung,

S. Hung, James, Johnson, Nelms, Reeves, Roppel, Wentworth and Wu

Non-engineering students may enroll only with departmental consent.

261. LINEAR CIRCUIT ANALYSIS I (3). Pr., PS 221, CSE 120 or equivalent. Coreq., MH 265. Basic laws and concepts; resistive circuits, linear algebra, R-L and R-C circuits.
263. LINEAR CIRCUIT ANALYSIS II (4). Pr., EE 261. Coreq., EE 264 for EE students. Sinusoidal forcing functions and phasors; steady-state response, average power and RMS values, polyphase circuits and magnetically coupled circuits.

264. LINEAR CIRCUIT ANALYSIS II LABORATORY (1). LAB. 3. Coreq., EE 263. Experiments in electrical circuits.
291. ELECTROMAGNETIC PRINCIPLES I (3). Pr., PS 221, PS 222, MH 265. Scalar and vector fields, Coulomb's and Gauss' laws, the electrostatic field, Biot-Savart's and Ampere's laws, the magnetostatic field, Laplace's and Poisson's equations; coordinated classroom and laboratory demonstrations.
301. ENGINEERING INSTRUMENTATION (3). LEC. 2, LAB. 3. Pr., EE 263 or EE 302. Principles of instrumentation. The detection and measurement of physical quantities with emphasis on transducers, signal processing and display. (Not open to Electrical Engineering majors.)
302. INTRODUCTION TO ELECTRICAL ENGINEERING I (3). Pr., PS 221. Coreq., MH 265. Electrical circuit analysis - dc, ac and transient; power devices and systems.
303. INTRODUCTION TO ELECTRICAL ENGINEERING II (3). Pr., EE 302. Digital systems; electronic devices; amplifier concepts.
330. ANALYSIS AND DESIGN OF LOGIC CIRCUITS (4). LEC. 3, LAB. 3. Pr., CSE 120. Binary numbers; Boolean algebra, Boolean functions, truth tables and Karnaugh maps; gates and flipflops; combinational and sequential logic circuits; design methods and design verification; logic families and logic technologies.
335. COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING (3). Pr., EE 330. Stored program computers, hardware components, software components; data representation and number systems; instruction sets, addressing modes and assembly language programming; subroutines and macros; assemblers; loaders, linkers and operating systems; memory, memory cycle and memory hierarchy; arithmetic/logic unit; control unit, program counter and instruction cycle; input/output, input/output programming and interrupts. (Credit is not allowed for both EE 335 and CSE 335.)
340. COMMUNICATIONS I (3). Pr., EE 362. Fourier series, Fourier transforms, spectral analysis, amplitude and angle modulation, frequency division multiplexing.
341. COMMUNICATIONS II (4). LEC. 3, LAB. 3. Pr., EE 340, IE 311. Pulse modulation, time-division multiplexing, random processes, correlation analysis, power spectra, information and digital transmission, quantization noise, digital modulation; ASK, PSK, FSK; introduction to digital signal processing.
351. LINEAR FEEDBACK SYSTEMS (4). Pr., EE 362 or COI for non-EE students. Transfer functions, transient and steady state performance, stability, design and compensation of feedback control systems.
362. LINEAR SYSTEMS (5). LEC. 4, LAB. 3. Pr., MH 266, EE 263, 264. Fourier series, Fourier transforms, Laplace transforms.
371. ELECTRONICS I (4). Pr., EE 263 or 302. Semiconductors, principles of electronic devices, design of low frequency electronic circuits.
374. ELECTRONICS II (3). Pr., EE 371. Integrated circuits, high frequency limitations of electronic devices, frequency response, feed back, design of high frequency and feedback electronic circuits.
381. INTRODUCTION TO ELECTRIC POWER ENGINEERING (3). Pr., EE 263. Power in polyphase ac circuits; symmetrical components; per-unit scaling; the power transmission lines; linear and nonlinear magnetic circuits; power transformers.
382. ELECTROMECHANICAL ENERGY CONVERSION (4). LEC. 3, LAB. 3. Pr., EE 381. General electro-magnetic-mechanical energy conversion; steady state and transient performance of dc machines, polyphase ac induction machines and single-phase induction and reluctance machines.
383. POWER SYSTEMS ANALYSIS (4). LEC. 3, LAB. 3. Pr., EE 382. Polyphase synchronous machines; power transmission line performance; the power flow problem; power system voltage and generation control.
392. ELECTROMAGNETIC PRINCIPLES II (3). Pr., EE 263, EE 291. Faraday's law, electrodynamics, Maxwell's equations, the wave equation and its solution, wave reflection, refraction and diffraction, transmission line concepts, coordinated classroom and laboratory demonstrations.
393. APPLIED ELECTROMAGNETICS (4). LEC. 3, LAB. 3. Pr., EE 392. Analysis and design of commonly-used waveguides and guided-wave structures and devices. Introduction to and design of simple antennas and other radiating structures. Coordinated classroom demonstrations and laboratory experiments.
- 401-402. SENIOR DESIGN PROJECTS (3-3). Pr., senior standing and COI. A capstone design project which draws on the accumulated curricular experience. Particular project sections may have additional requisites. Must be taken in consecutive quarters. 401 will be graded S-U.
430. COMPUTER SYSTEM DESIGN (4). LEC. 3, LAB. 3. Pr., EE 335, 371. Computer I/O, I/O hardware, programmed I/O, interrupts, DMA and I/O programming; microprocessors, support chips, peripherals and programming; system specification, design and verification.
452. DISCRETE AND NONLINEAR CONTROL SYSTEMS (4). LEC. 3, LAB. 3. Pr., EE 351. Analysis and design of discrete control systems, with emphasis on digital control systems; describing functions; state-plane analysis.
475. ELECTRONICS III (4). LEC. 3, LAB. 3. Pr., EE 330, 374. Oscillators, IC operational amplifiers, linear analog systems, nonlinear analog systems, IC logic families, power circuits.
490. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter.
493. INTRODUCTION TO ELECTROMAGNETIC COMPATIBILITY AND INTERFERENCE (3). Pr., EE 362, 371, 392. Electrical noise suppression and control in electrical systems.
494. RADAR SYSTEMS (3). Pr., EE 340, 392. Introduction to the fundamentals of radar systems.
495. MICROWAVE COMPONENTS AND SYSTEMS DESIGN (3). Pr., MH 266, EE 393. Design guidelines for microwave systems including waveguides, waveguide devices, microwave sources including klystrons, magnetrons, TWT's and solid-state devices. Coordinated homework design projects and classroom demonstrations and presentations.

486. DESIGN OF ANTENNAS AND ANTENNA SYSTEMS (3). Pr., MH 266, EE 383. Design of antenna elements and phased arrays of these elements, antenna system performance parameters and guidelines, antenna measurements and measurement systems.
497. DESIGN PROJECTS (2). Pr., senior standing and COI. Individual or group design projects. May not be taken more than twice.
498. HONORS THESIS (1-6). Pr., COI and department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (EE Honors Program students only. May be repeated once for a maximum of six total credit hours.)
499. SPECIAL PROJECTS (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter.

### ADVANCED UNDERGRADUATE AND GRADUATE

521. MACHINE INTELLIGENCE AND ROBOTICS I. (4). LEC. 3, LAB. 3. Pr., EE 430, COI. Software and hardware pertaining to the design of intelligent computer systems. Problem representation, game playing. State space search techniques, problem reduction search techniques, Mini Maxing-Alpha Beta Pruning; sensors, transducers, optics; automatic controllers, numeric controller machines, industrial and research robots.
523. ADVANCED DIGITAL CIRCUIT DESIGN (4). LEC. 3, LAB. 3. Pr., EE 430. Advanced design of digital logic circuits, using discrete gates and programmable logic devices, hardware description languages, circuit simulation for design verification and analysis, fault diagnosis and testing.
524. MICROPROCESSORS AND MICROCOMPUTERS (3). Pr., EE 430 or COI. Microcomputer chip sets, microcomputer system design, machine programming, PROM programming, interfacing, applications, bit-sliced microprocessors, advanced microprocessor/microcomputer architectures.
530. COMPUTER ARCHITECTURE AND DESIGN (4). Pr., EE 430. Structural organization and hardware design of digital computers; register transfers; micro-operations, control units and timing; instruction set design; microprogramming; automated hardware design aids. (Credit is not allowed for both EE 530 and CSE 530.)
532. COMPUTER NETWORKS (3). Pr., EE 430 or COI. Introduction to distributed systems, network architectures, protocols, digital communication links, data management and related software design. (Credit is not allowed for both EE 532 and CSE 532.)
533. PARALLEL PROCESSING (3). Pr., EE 530 or equivalent and CSE 500. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines and data flow architecture; design principles related to machine structures, control software and hardware, data storage and access, programming, languages and application algorithms. (Credit is not allowed for both EE 533 and CSE 533.)
534. NEURAL NETWORKS I (3). Pr., EE 430 or equivalent. Overview of neural network computing; evolution of development in neural computing; Perceptrons, Adaline and Medaline; Hopfield net and bi-directional associative memory; backpropagation net; Boltzmann and Cauchy machines; self-organizing feature maps; counterpropagation net; adaptive resonance theories; implementations.
545. AUTOMATIC SPEECH PROCESSING (4). Pr., EE 341. Introduction to Fourier, Z and fast Fourier transforms; discrete time signals and systems; digital models of the speech signals; speech coding schemes; spectrograms, cepstrum and linear prediction analysis of speech; time domain techniques; introduction to human-machine communication by voice.
546. INTRODUCTION TO PATTERN RECOGNITION (3). Pr., EE 341. Decision functions, distance measures and clustering. Bayes and minimax pattern classifiers, preprocessing and feature extraction.
547. DIGITAL FILTERS AND SIGNAL PROCESSING — DESIGN (5). LEC. 4, LAB. 3. Pr., EE 341 and EE 452.. The digital processing of signals, digital filters, the discrete and the fast Fourier transform, discrete random signals, power spectrum estimation and autocorrelation analysis.
551. THE DESIGN OF ANALOG AND DIGITAL COMPUTER SIMULATIONS OF PHYSICAL SYSTEMS (5). LEC. 3, LAB. 6. Coreq., EE 452. Analog and Digital Computer simulation of physical systems; optimization techniques for design; parameter variation to achieve design objectives.
552. MODERN DIGITAL CONTROL SYSTEMS DESIGN (3). Pr., EE 452. Linear algebra, state variable modeling, pole assignment design, optimal design, design of state estimators.
553. MICROPROCESSOR CONTROL SYSTEMS DESIGN (5). LEC. 4, LAB. 3. Pr., EE 430. Coreq., EE 452. Electrical transducers. Characteristics of operational amplifiers used for instrumentation. Signal conditioning operations. Data conversion systems. Signal transmission methods. Process controllers. Microprocessor controller examples.
554. LINEAR SYSTEMS WITH RANDOM SIGNAL INPUTS (4). Pr., IE 311, Coreq. EE 452. Review of probability and random variables, random signals, analog and discrete system response to random signals Monte Carlo simulations.
570. PHYSICAL ELECTRONICS I (3). Pr., EE 291, PS 320. Studies of the electrical properties of materials with emphasis on semiconductors.
571. PHYSICAL ELECTRONICS II (3). Pr., EE 570. Physical properties of electrical and electronic devices.
572. MICROELECTRONICS — FABRICATION AND DESIGN (4). LEC. 3, LAB. 3. Pr., EE 374. Introduction to monolithic integrated circuit technology. Bipolar and MOSFET processes and structures. Elements of layout, design, fabrication and applications. Experiments in microelectronic technologies.
573. HYBRID ELECTRONIC DESIGN (4). LAB. 3, LAB. 3. Pr., EE 374 or COI. Technology and design of thick and thin film hybrids for implementations of circuit schematics. Techniques are demonstrated in the laboratory and a functional circuit is designed, fabricated and tested.
574. INTRODUCTION TO OPTOELECTRONICS (3). Pr., EE 392. Optical propagation modes, fiberoptics, lasers, electro-optic modulation, detectors and noise in optical systems.

575. ANALOG ELECTRONIC DESIGN (3). Pr., EE 475 and COI. Design of analog integrated circuits; current sources, differential amplifiers, output stages, operational amplifiers, frequency response. Nonlinear circuits: multipliers and phase-locked loops.
576. DIGITAL ELECTRONIC DESIGN (3). Pr., EE 374. Solid-state device switching characteristics; design simulation and layout of electronic circuits including logic gates, registers and memory arrays; full custom, standard cell and gate array design; CAD systems for layout and simulation; student teams will be responsible for a LSI chip design.
579. INTRODUCTION TO PLASMA ENGINEERING (3). Pr., EE 291 or COI. Electrical breakdown and discharges in gases, basic plasma theories, gas lasers, plasma processing of materials, controlled fusion, plasma switches, microwave generation.
581. APPLICATIONS AND DESIGN OF ELECTROMECHANICAL SYSTEMS (3). Pr., EE 383 or COI. Transformer connections. NEMA and IEEE Motor Standards. Matching motors to cyclic loads. Machine transient analysis.
582. APPLICATION AND DESIGN OF POWER ELECTRONIC SYSTEMS (3). Pr., EE 383 or COI. Polyphase power rectifiers and inverters. Solid state drives for rotating machines. Characteristics of high power solid state components.
583. ELECTRICAL INSULATION DESIGN (3). Pr., EE 392. Design of insulation for all engineering applications. Includes vacuum, gaseous, liquid and solid insulations. Coordinated homework design projects and classroom demonstrations and presentations.
585. DESIGN OF POWER SYSTEM PROTECTION (3). Pr., EE 383 or COI. Symmetrical components and analysis of unbalanced faults on power systems. Relay and protection schemes.
586. DIRECT ENERGY CONVERSION (3). Pr., EE 291, 383, ME 301, COI. Fundamentals and energy considerations; thermoelectric devices, photovoltaic devices, thermionic devices, magnetohydrodynamic power generation, batteries and fuel cells. Ecological consideration.
587. DESIGN OF POWER SYSTEM CONTROLS (3). Pr., EE 383 or COI. P-I control loop, automatic generation control, economic dispatch, transmission losses, reserve allocation, decoupled power flow, matrix inversion Lemma, Q-V control.
588. POWER SYSTEM PLANNING AND DESIGN (3). Pr., MH 266, EE 383 or COI. Reliability techniques applied to the planning and design of generation, transmission and distribution facilities of electrical power systems.
590. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter.
597. SPECIAL DESIGN TOPICS (3). Pr., senior standing and COI. May not be taken more than twice.

## Engineering (EGR)

General Curriculum (GC) students (those with undeclared majors) may enroll only with departmental consent. For other engineering courses, refer to individual departmental course offerings.

201. THERMODYNAMICS I (3). Pr., MH 264, PS 222 and CSE 120 or equivalent computer programming skills. Laws of thermodynamics; energy transformations; properties and relationships among properties; equations of state and simple processes and cycles.
205. ENGINEERING MECHANICS—STATICS (3). Pr., PS 220, CSE 120. Coreq., MH 264. Basic principles of vectors, forces, moments and free body diagrams. Force systems and equilibrium in two and three dimensions. Friction.
207. MECHANICS OF MATERIALS (3). Pr., EGR 205, MH 264. Coreq., MH 265. Fundamental concepts of stress and strain; transformations; stress-strain relationships; applications to uniaxially loaded members; centroids and area moments of inertia; torsion; normal stresses in beams.
235. DYNAMICS (3). Pr., EGR 205. Coreq., MH 265. Newtonian approach to the analysis of two dimensional motion of particles and rigid bodies. Work-energy and impulse-momentum principles are applied to particle motion.
420. PROFESSIONAL PRACTICE IN ENGINEERING (1). LEC. 1. (S-U graded.) Pr., upper division standing. Professional engineering attitudes, ethics and social responsibilities.
450. ENGINEERING HONORS (1). May be taken for no more than two quarters. Pr., junior standing. Open to Honors Program students only.
491. LEGAL ASPECTS OF ENGINEERING, ARCHITECTURE AND DESIGN (3). Legal aspects of engineering and design; an introduction to the American legal system with emphasis on problems of the engineering and design professions.



## English (EH)

Professors Rygiel, *Head*, Cunningham, Hitchcock, Jacobson, Latimer, Littleton, Morrow, Solomon, Welt and T. Wright

Associate Professors J. Clark, Dunlop, Gresham, Hammersmith, Kouidis, Morton, Rose, Smith and Thompson

Assistant Professors Bernstein, Brown, Campbell, M. Clark, Crandell, Cummings, Daron, Giddens, Haney, LaPointe, McKelly, Nunnally, Relihan, Rothschild, Silverstein, St. John, Van Gastel, Wehrs, Wemer and R. Wright

Instructors Bailey, Bancroft, Buccleugh, Burgess, Christensen, Gaston, Hutton, Hyles, Mason, Merryman, Pagan, Pelikka, Phelan, Roberson, Rogers, Roper, Scogan, Stuart, Viator, Ward, Waters, Williford and J. Wright

Freshman English Composition (110, 115 or 118) is required of all students and is a prerequisite for all other courses in English.

Most 300 through 600-level five-hour EH courses are offered in alternate years rather than annually. An exact schedule of course offerings is available in the English Department office.

## I. GENERAL CURRICULUM COURSES

090. PROFICIENCY IN ENGLISH FOR FOREIGN STUDENTS (NO CREDIT).
100. BASIC ENGLISH (NO CREDIT). English grammar and mechanics and fundamentals of composition. Recommended for students with poor composition backgrounds or for students whose ACT or SAT verbal scores are low.
- 101-102-103. ENGLISH COMPOSITION (3-3-3). EH 101 pr. for 102; 102 pr. for 103. The essentials of composition and rhetoric. Reading of selected essays, fiction, poems and plays.
110. ENGLISH COMPOSITION (5). All quarters. Intensive study of and practice in effective expository and argumentative writing.
115. WRITING SEMINAR (5). Pr., departmental approval. Fall and Winter. Special topics in writing for superior students.
118. HONORS WRITING SEMINAR (5). Pr., approval by the University Honors Program. Fall and Winter. Special topics in writing for students in Honors.
141. MEDICAL VOCABULARY (3). Fall, Winter, Spring. Prefixes, suffixes and the more common root words of medical terminology.
180. PROFICIENCY IN ENGLISH FOR FOREIGN STUDENTS (1).
- 220-221. GREAT BOOKS I, II (5-5). Pr., EH 110, 115 or 118 and sophomore standing or approval by the English Department; EH 220 pr. for 221. Significant texts in Western civilization: EH 220, ancient Greece through the Renaissance; EH 221, 17th century to the present.
- 250-251. HONORS SURVEY OF ENGLISH LITERATURE (5-5). EH 250 rec. before 251. English literature from Beowulf to the present. An optional alternative to EH 253-254-255 for students with a B or better average in Freshman English.
- 253-254-255. SURVEY OF ENGLISH LITERATURE (3-3-3). All quarters. Courses recommended to be taken in sequence. English literature from Beowulf to the present.
- 260-261-262. SURVEY OF LITERATURE OF THE WESTERN WORLD (3-3-3). All quarters. Courses recommended to be taken in sequence. Master works from Homer to Faulkner: EH 260, the classical period; EH 261, medieval through 18th century; EH 262, 19th and 20th centuries.
- 270-271-272. SURVEY OF AMERICAN LITERATURE (3-3-3). All quarters. Courses recommended to be taken in sequence. EH 270, beginnings to mid-19th century; 271, later 19th and early 20th centuries; 272, 20th century.
275. AMERICAN AUTHORS (5).
- 281-282. HONORS GREAT BOOKS I, II (5-5). Pr., EH 118 or equivalent and approval by the University Honors Program; EH 281 pr. for EH 282. Significant texts in Western civilization; EH 281, ancient Greece through the Renaissance; EH 282, 17th century to the present.

## II. ENGLISH LITERATURE

405. CHAUCER (5). The major works of Chaucer in Middle English.
406. MEDIEVAL ENGLISH LITERATURE (5). Concentrates on *Le Morte d'Arthur*, *Sir Gawain and the Green Knight*, *Pearl*, medieval drama and the Middle English lyric.
450. MODERN BRITISH LITERATURE (5). British poetry and prose, 1810-1945.
452. CONTEMPORARY BRITISH LITERATURE (5). British poetry and prose, 1945-present.
454. SEMINAR IN LITERARY TOPICS (5). Concentrated investigation of major figures in varying literary fields. May be repeated once for credit with department's approval. May be taken in Categories II-VI.
461. ENGLISH DRAMA, BEGINNINGS TO 1642 (5).
462. POETRY AND PROSE OF THE ENGLISH RENAISSANCE, 1475-1603 (5).
463. RESTORATION AND NEO-CLASSICAL LITERATURE, 1660-1745 (5).
484. THE AGE OF JOHNSON, 1745-1798 (5). Poetry, prose and drama.
485. MILTON (5).

- 466. POETRY AND PROSE OF THE 17TH CENTURY (5). Non-dramatic British literature, 1603-1660.
- 469. 18TH-CENTURY ENGLISH NOVEL (5).
- 470. EARLY SHAKESPEARE (5). The Comedies, Histories and Early Tragedies. Credit for this course precludes credit for EH 350.
- 471. LATER SHAKESPEARE (5). Tragedies, Dark Comedies and Romances. Credit for this course precludes credit for EH 350.
- 474. 19TH-CENTURY ENGLISH NOVEL (5).
- 475. ROMANTIC LITERATURE, 1790-1830 (5). Poetry and prose from Wordsworth through Keats.
- 477. VICTORIAN LITERATURE, 1830-1890 (5). The major poets and nonfiction writers from 1830 to 1890.
- 479. HONORS THESIS (3). For Honors Program students. Repeatable once. May be taken in Categories II-VI.
- 498-499. READINGS FOR HONORS (5-5). Pr., junior standing with a minimum of 3.0 overall average, a 3.5 average in at least five upper division English courses and the consent of the English Department. Individual reading programs in a specific period or phase of literature or language, as determined by the instructor and student. An honors essay and a written examination will be required. May be taken in Categories II-VI.
- 525. SPECIAL TOPICS SEMINAR (3-5). May be taken in Categories II-VI.

### III. AMERICAN LITERATURE

- 425. THE SHORT STORY (5). The development of the short story in America and Europe from the early 19th century to the present.
- 440. EARLY AMERICAN LITERATURE (5). American literature to 1800.
- 441. AMERICAN ROMANTICISM (5). 19th-century American literature, to approximately 1865.
- 442. AMERICAN REALISM AND NATURALISM (5). American literature of the later 19th and early 20th centuries.
- 443. MODERN AMERICAN LITERATURE (5). American poetry and prose, 1914-1945.
- 444. CONTEMPORARY AMERICAN LITERATURE (5). American poetry and prose, 1945-present.
- 472. THE AMERICAN NOVEL (5).
- 473. AMERICAN POETRY (5). Major American poets from the colonial period to the present.
- 495. SOUTHERN LITERATURE (5). The poetry, fiction and nonfiction prose writings in the South from Revolutionary times to the present, with major emphasis centering on Southern regional attitudes and trends. Credit for this course precludes credit for EH 365.

### IV. LITERATURE IN TRANSLATION

- 412. THE EUROPEAN NOVEL (5). The reading and analysis of significant novels by major European writers.
- 430. THE CLASSICAL BACKGROUND (5). Readings from the major Greek and Roman writers. The texts studied are chosen with particular attention to their subsequent influence upon English and American literature.
- 435. CONTEMPORARY DRAMA (5). Continental, British and American dramatists from Ibsen to the present.
- 490. STUDIES IN COMPARATIVE LITERATURE (5). Non-British and non-American literature written in English or studied in translation.

### V. LANGUAGE AND CRITICISM

- 403. INTERPRETING TEXTS (5).
- 410. CONTEMPORARY RHETORIC (5). The principles of rhetorical analysis and of modern stylistics with practical application of those principles to varied types of literary materials.
- 411. INTRODUCTION TO LINGUISTICS (5). A broad survey of the system and structure of modern American English (sounds, words, syntax, meaning) as well as developments in special areas of English linguistics, including the neurology and psychology of language, animal communication and regional and social dialectology.
- 481. SURVEY OF CRITICAL THEORY (5).
- 541. HISTORY OF THE ENGLISH LANGUAGE (5). The chronological development of the English language.
- 594. MODERN ENGLISH GRAMMARS (5). Modern methods of language study, with particular emphasis on English syntax and semantics.

### VI. WRITING COURSES

- 400. ADVANCED COMPOSITION (5). All quarters. The practice and theory of expository writing; the command of language for the clear and forceful communication of ideas.
- 401. PRINCIPLES OF DESIGN IN LANGUAGE (5). Pr., one English course in literature at the sophomore level or above. Drawing upon the affinity between the process of writing and that of spatial design, enhancement of student skills in writing, literacy, interpretation and research.
- 420. INTRODUCTORY FICTION WRITING (5).
- 421. ADVANCED FICTION WRITING (5). Pr., EH 420.
- 427. INTRODUCTORY POETRY WRITING (5).
- 428. ADVANCED POETRY WRITING (5). Pr., EH 427.
- 429. SPECIAL PROJECT IN CREATIVE WRITING (5). Pr., EH 420 or 427. Extensive writing in varying literary genres, the specific kind of writing to be announced each time the course is offered. Course may be repeated once for credit, with COI and department's consent.

## VII. COURSES ON SPECIAL TOPICS

310. WORD STUDY (3). A general, broad-based exploration of the lexical component of the English language.
319. STUDIES IN CHILDREN'S LITERATURE (3).
335. CLASSICAL MYTHOLOGY (3). The character and influence of Greek and Roman mythology.
350. SHAKESPEARE'S GREATEST PLAYS (3). Some of Shakespeare's masterpieces. Credit for EH 470 or 471 precludes credit for this course.
365. SOUTHERN LITERATURE (3). Credit for EH 495 precludes credit for this course.
373. SCIENCE FICTION (3). Representative science fiction from the 19th century to the present.
374. THE GOTHIC NOVEL (3).
382. POPULAR LITERATURE (3). Various types of formula literature such as the detective story and the Western and of the techniques of popular fictional writing.
383. WOMEN IN LITERATURE (3).
384. LITERATURE AND CULTURE (3).
385. RECENT FICTION (3). The reading and discussion of selected examples of the New Fiction.
386. CONTEMPORARY PROSE (3). Recent nonfiction prose works noteworthy for their style and content.
387. WORLD ENGLISH LITERATURES (3). Studies in non-British and non-American literature written in English.
388. STUDIES IN COMEDY (3).

## ENGLISH — APPLIED WRITING (EHA)

304. TECHNICAL WRITING (3). All quarters. Practical writing, especially correspondence and reports, for students in scientific and technical fields. Credit for EHA 315 precludes credit for this course.
307. CRIMINAL JUSTICE REPORT WRITING (3). Fall, Spring. Report and correspondence writing for students in criminal justice fields.
315. BUSINESS AND PROFESSIONAL REPORT WRITING (3). All quarters. The writing of formal and informal business reports with emphasis on design, organization, research and presentation.
415. WRITTEN BUSINESS COMMUNICATIONS (3). Pr., EHA 315, for curricula requiring EHA 315 and 415. All quarters. Application of semantics, communication theory, human relations and rhetorical techniques to written business communications; practice in expository and persuasive writing.
416. TECHNICAL AND PROFESSIONAL EDITING (5). Pr., one of the following: EHA 304, 315, EH 400 or COI. Editing technical and professional documents for organization, format, style and mechanics. Designed to help students develop professional competence as editors.
501. ADVANCED PROFESSIONAL WRITING (5). Pr., COI. Document design, readability, graphics, audience analysis in advanced professional and technical writing tasks.
502. PRACTICUM IN PROFESSIONAL WRITING (5). Pr., COI. Supervised experience in editing technical, business and scientific documents.
503. TOPICS IN TECHNICAL AND PROFESSIONAL WRITING (5). Pr., one of the following: EHA 304, 315 or 416. May be repeated once for credit with department's consent.

## Entomology (ENT)

Professors Brewer, Head, Berger, Clark, Cobb, French, Mullen and Smith  
Associate Professors Appel, Cane, Gaylor, Hyche, Kouskolekas, Mack, McVay,  
Strother, Weeks and Williams

Assistant Professors Benson, Estes, Freeman and Moar

204. INSECTS (3). LEC. 3. Fall, Winter and Spring. Life processes, occurrence and importance of insects.
209. BEE BIOLOGY (3). LEC. 3. Winter. Principles of ecology, behavior, physiology and genetics will be used to understand the biology of bees and their ecological roles in pollination.
210. APICULTURE (2). LAB. 4. Pr., ENT 209. Spring. Apply knowledge of honey bee biology to the care and management of small apiaries for the production of honey and wax and for commercial pollination.
215. FOREST PESTS (4). LEC. 3, LAB. 1. Pr., BI 101-102. Spring. Diseases and pests of forest and shade trees from seedling to maturity. Pest damage to wood products will also be discussed. Field trip will emphasize major forest pest problems in Alabama.
304. GENERAL ENTOMOLOGY (5). LEC. 4, LAB. 3. Pr., BI 103. Fall, Spring. Introduction to the biology and diversity of insects.
305. FOREST ENTOMOLOGY (3). LEC. 2, LAB. 3. Pr., BI 103. Fall. Entomology in relation to insects of forests and forest products; recognition, life histories and control of major insects of forests. Forestry students only.
404. INSECTS AFFECTING MAN AND ANIMALS (5). LEC. 4, LAB. 1. Fall. Surveys insects, mites, ticks, spiders and other arthropods which attack man and domestic animals. Emphasis is given to recognition of pest species, their biology and role in transmitting disease agents of veterinary or public health importance.
405. APPLIED ENTOMOLOGY (5). LEC. 4, LAB. 3. Pr., ENT 304. Spring. Biology, economic importance and management of the more important insect pests in each of the various agricultural commodity groups.
408. ALTERNATIVE METHODS OF INSECT PEST MANAGEMENT (5). LEC. 5. Pr., ENT 405. Fall. An introduction to insect management tactics other than chemical insecticides.

## Family and Child Development

481. ENTOMOLOGY INTERNSHIP (UP TO 5 HRS. PER QUARTER, 15 HRS. MAXIMUM.) COI, SU graded. Provides practical job experience under joint supervision of the internship advisor and appropriate state, federal or private agency. Training will prepare student for potential career employment.
498. SPECIAL PROBLEMS OR TOPICS (1-3). Pr., senior standing. A student can register for a total of not more than three hours credit.

### ADVANCED UNDERGRADUATE AND GRADUATE

502. ECONOMIC ENTOMOLOGY (5). LEC. 4, LAB. 3. Fall, Spring. Consideration of the biological aspects, life histories and control of insects. Not for graduate credit for students in College of Agriculture departments.
503. TOXICOLOGY OF INSECTICIDES (5). LEC. 4, LAB. 3. Winter. Toxic actions of insecticides; formulations, application methods and uses of insecticides; research methods and uses of insecticides; research methods in insect toxicology; insecticide residues in relation to man and the environment.
505. FOREST INSECTS (5). LEC. 4, LAB. 3. Pr., ENT 200, ENT 305 or ENT 502. Spring, even years. Principal insects of forests and forest products; their importance, taxonomy, bionomics and control.
507. GENERAL INSECT MORPHOLOGY (5). LEC. 3, LAB. 6. Pr., ENT 304 or equivalent. Winter. General introduction to form and function in insects and related arthropods. Morphological characteristics used in insect identification will be emphasized.
510. INSECT IDENTIFICATION (5). LEC. 3, LAB. 4. Pr., ENT 304 or equivalent. Spring. Learn to use the tools of the taxonomist to identify the more common insect families. A collection is required. Field trips will be taken.
514. AQUATIC INSECT BIOLOGY (5). LEC. 3, LAB. 6. Pr., ENT 304. Winter. Ecology, systematics and identification of aquatic and semiaquatic insects. Some emphasis will be placed on groups of significance in food webs or of value as indicator organisms. A collection will be required. Some weekend field trips will be taken.

### Environmental Science (EHS)

For information on this program refer to the description of the curriculum in the Interdepartmental curricula section of the *Bulletin*.

### Family and Child Development (FCD)

Professors Avery, Bradbard, Head, Henton, Turner and Vaughn  
Associate Professors Lamke, Lindholm, Mize, Pettit, Pittman, Salts,  
Smith, Sollie and Waddell  
Assistant Professors Allgood, Duncan, Giles, Goddard, Hill, Solheim and Waters  
Instructors Grover and Silvern

157. FAMILY AND HUMAN DEVELOPMENT (3). Human development as it is affected by the family and the family as it affects and is affected by the environment. Prior credit for any other Family and Child Development course precludes credit for this course for majors only.
200. MANAGEMENT FOR CONSUMERS (4). Management of consumer resources, with emphasis on decision-making and problem-solving skills over the life cycle.
267. HUMAN DEVELOPMENT I: PRINCIPLES, THEORIES AND METHODS (5). Introduction to the principles, theories and methods in the study of human development.
269. MATE SELECTION AND MARITAL INTERACTION (4). Analysis of courtship, mate selection and marital interaction. Factors contributing to marital stability and success.
280. HUMAN DEVELOPMENT II: INFANCY (4). Pr., FCD 267 or COI. Intensive study of physical, cognitive and psycho-social aspects of development from conception to age two. Lab experiences may be arranged.
287. CAREERS IN FAMILY AND CHILD DEVELOPMENT (2). Introduces students to the range of career choices in the field of family and child development and the preparation needed to qualify for them. Includes orientation to the department.
301. HUMAN DEVELOPMENT III: EARLY AND MIDDLE CHILDHOOD DEVELOPMENT (5). LEC. 4, LAB. 2. Pr., FCD 267. Physical, intellectual, social and emotional development of children from early through middle childhood; familial influences on development and behavior. Laboratory experiences are required.
302. HUMAN DEVELOPMENT IV: ADOLESCENCE AND EARLY ADULTHOOD (4). Pr., FCD 267 and junior standing. The individual from adolescence through early adulthood, emphasizing familial influence on development and behavior. Field assignments are required.
304. HUMAN SEXUALITY THROUGHOUT THE FAMILY LIFE CYCLE (4). Pr., SY 201 and PG 211 or 213, junior standing. Human sexuality from a life cycle perspective, with emphasis on developmental, familial and societal factors that influence individual sexuality.
306. PATTERNS OF FAMILY INTERACTION (4). Pr., FCD 269. Current theories of family interaction including normal and deviant patterns and other effects.
308. RELATIONSHIP COMPETENCE (3). Pr., 269. An empirical examination of the interpersonal competencies necessary for the development of successful dating and marital relationships.
309. INTRODUCTION TO MARRIAGE AND FAMILY THERAPY (4). Pr., FCD 269. A broad overview of the history, theory and application of marriage and family therapy.
310. TECHNIQUES OF CHILD AND FAMILY INTERVIEWING (4). Pr., COI. Principles and techniques of interviewing and establishing a helping relationship with children and families.

## *Family and Child Development*

323. CONSUMER AND THE MARKET (3). Pr., junior standing or COI. Management of family resources and consideration of alternatives available to families as consumers. Consumer problems, use of information sources and analysis of laws protecting consumers.
347. LABORATORY EXPERIENCES WITH YOUNG CHILDREN (3). LEC. 1, LAB. 6. Pr., FCD 267 and 301. Substantive lecture material and supervised participation in the Child Study Center preschool programs. (Required of all FCD majors.)
350. DAY CARE FOR CHILDREN (4). Pr., FCD 267, 301, junior standing or COI. An historical and theoretical study of day care with discussion of multi-cultural programs, licensing standards and various patterns of group and family day care service. Field assignment required.
358. LEARNING EXPERIENCES FOR YOUNG CHILDREN (4). LEC. 3, LAB 3. Pr., FCD 301 and 347. Theoretical foundations and practical applications of programs and activities for young children.
399. EXPERIENTIAL LEARNING (1-6). TBA. COI. Independent work experience arranged. A. Child Study Center; B. Other approved placements. May be taken more than once. Total credit not to exceed six hours.
409. UNDERGRADUATE RESEARCH AND STUDY. (CREDIT TO BE ARRANGED.) (1-5). May be repeated for a maximum of 5 credits. Pr., departmental approval of written application. All quarters. Consent for enrollment is based on a written proposal outlining the proposed course of study. Students should consult the department for further information and approval forms.
410. DIRECTED READING IN FAMILY AND CHILD DEVELOPMENT. (CREDIT TO BE ARRANGED.) (1-3). Pr., COI. May be repeated for a maximum of three credits.
420. RECENT RESEARCH IN FAMILY AND CHILD DEVELOPMENT (4). Pr., FCD 267, 301. Synthesis of recent research in family and child development with particular emphasis on studies dealing with family influences on children.
438. STUDY/TRAVEL IN FAMILY AND CHILD DEVELOPMENT (2-8). Pr., junior standing and COI. Course may be repeated for a maximum of 12 undergraduate credit. Concentrated study of family and child development in foreign locations aimed at greater understanding of the dynamics of child development and patterns of family life. Lectures presented at prearranged points. Papers required on selected phases of the course.
467. PARENT EDUCATION (4). Pr., FCD 301. The principles of working with parents on both an individual and group basis. Laboratory experiences may be arranged.
477. HUMAN DEVELOPMENT V: FAMILY AND AGING (3). Pr., FCD 306. The interactive nature of the aging process as it relates to the family and its older members with emphasis upon the problems of health, finances, housing and leisure time. Laboratory experiences provided.
497. INTERNSHIP (5-15 HOURS IN A, B, C, D, E OR F). Pr., Students must have a 2.0 GPA in all required FCD courses to enroll. No more than three (3) options may be taken for a total of twenty (20) credits. A. Social Services; B. Family and Child Development; C. Maternal and Child Health; D. Day Care; E. Parent Education; F. Aged; G. Family Economics. Internship arranged on individual basis, supervised by faculty in community agencies, hospitals, clinics, Child Study and Marriage and Family Therapy Centers.
499. SEMINAR (2). Pr., FCD 497 or COI.

### ADVANCED UNDERGRADUATE AND GRADUATE

528. CONSUMER ECONOMICS (5). Pr., EC 202 and FCD 200 or COI. Consumption as an economic activity; theory of consumer choice, Consumer's role in the American economy; Impact of various market structures on the consumer; consumer protection; economic issues affecting the consumer.
530. CONSUMER/FAMILY ECONOMIC ISSUES AND PUBLIC POLICY (3). Pr., EC 202 and FCD 200 or COI. Investigation of the impact of consumer and family oriented laws and policies on individuals/families. Exploration of individual/family involvement with public policy and legal resources as a means for realizing satisfying lifestyles.
541. FAMILY FINANCIAL PLANNING (5). Pr., CA 200 or COI. Family financial planning, including short-term money management, long-term planning, allocation of family resources and use of credit.
547. ADMINISTRATION OF PROGRAMS FOR CHILDREN AND FAMILIES (3). Pr., senior standing in the major or related field, FCD 301 or equivalent. Essential procedures for implementing programs for children and/or families. Topics include housing and equipment, finances and record-keeping, nutrition and health, staffing and community relations.
550. HOSPITALIZED CHILDREN AND THEIR FAMILIES (5). LEC. 4, LAB. 2. Pr., senior standing in the major or related field, FCD 301 or equivalent. Theoretical principles and practical applications of child life programming as it relates to the psychosocial needs of hospitalized children and their families.
568. GENDER ROLES AND CLOSE RELATIONSHIPS (3). A critical analysis of women's and men's changing roles in society. Effects of these changes on relationship development, marriage and the family.



## Fisheries and Allied Aquacultures

### Finance (FI)

Professors Barth, Edmonds, Hand and Lloyd

Associate Professors Jahera, Head, McCord, Page and Tole

Assistant Professors Crutchley, Hudson, Jensen, Pugh and Sullivan

Effective Fall Quarter 1990, a 2.0 GPA will be required for enrollment in any Business course at the 300-level or above. This rule will apply to both Business and non-Business students.

- 320. RISK AND INSURANCE (5). Pr., FI 361. Essentials of risk management, with the emphasis on the use of insurance in meeting these risks; including the characteristics of property, liability, life and health insurance.
- 323. REAL ESTATE (5). Pr., FI 361. The fundamental principles and practices as applied to the purchase, sale, lease, mortgage, title and management of real estate.
- 340. PERSONAL FINANCE (5). Pr., non-business student, junior standing. Plans for managing personal financial problems involving insurance, housing, household budgeting, investments, personal and bank loans, credit and time buying, etc.
- 361. PRINCIPLES OF BUSINESS FINANCE (5). Pr., AC 212 or 215, EC 202 or 301 and junior standing. Short-term, intermediate and long-term financing of business firms.
- 362. SMALL BUSINESS FINANCE (5). Pr., FI 361. A continuation of FI 361 with emphasis on financial control, financial forecasting, investment decision-making, identification of sources of financing in a small business environment.
- 363. ADVANCED BUSINESS FINANCE (5). Pr., FI 361 and MN 301. A continuation of FI 361 with emphasis on capital budgeting, cost of capital, growth, promotion and reorganization.
- 367. MONEY MARKETS AND FINANCIAL INSTITUTIONS (5). Pr., FI 361. Structure and operation of commercial banks and other financial institutions and their role in the financing of business.
- 400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by the faculty committee. S-U graded.
- 421. PROPERTY INSURANCE (5). Pr., FI 320. The principles, uses and types of insurance with particular emphasis on fire, marine, automobile and casualty lines.
- 422. LIFE INSURANCE (5). Pr., FI 320. The organization of the life insurance business and the various types of contracts.
- 423. REAL ESTATE FINANCE AND INVESTMENT (5). Pr., FI 323 or COI. Analysis and evaluation of real estate investments.
- 451. MULTINATIONAL FINANCIAL MANAGEMENT (5). Pr., FI 361. The impact of various tax regulations, currency controls and exchange rates on the multinational firm.
- 463. FINANCIAL MANAGEMENT: CASES AND COMPUTER APPLICATIONS (5). Pr., AC 311 and FI 363. The analysis of complex financial management cases with computers.
- 464. INVESTMENTS (5). Pr., FI 361, MN 301 and junior standing. Individual investment policies, investment institutions and types of investments available.
- 466. SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT (5). Pr., AC 311, FI 363 and 464. Analysis techniques and selection of securities to meet specific investment objectives.
- 469. MANAGEMENT OF FINANCIAL INSTITUTIONS (5). Pr., AC 311, FI 361 and 367. Concentration on internal operations of financial institutions, especially banks.
- 470. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
- 471. UTILITY FINANCE (5). Pr., AC 311 or COI and FI 363. An in-depth study of financial applications related to public utilities.
- 490. SPECIAL PROBLEMS (1-10). Pr., FI 363 and senior standing. Advanced individual research and study in finance under guidance of a faculty member. S-U graded.

### Fisheries and Allied Aquacultures (FAA)

Professors Shell, Head, Bayne, Boyd, Davies, Duncan, Grizzle, Grover, Hosking,  
Jensen, Lovell, Lovshin, Plumb, Rogers and Smitherman

Associate Professors Dunham, Phelps, Popma, Rouse and Wallace

Assistant Professors Bain, Brady, Devries, Masser and Szedlmayer

- 201. COMMERCIAL MARINE FISHERIES OF ALABAMA (3). Summer. Exploitation and biology of commercial vertebrates and invertebrates of Alabama and the adjoining Gulf of Mexico, with emphasis on distribution, harvesting technology, processing and economic values. Laboratory exercises include visits to local processing plants and a trawling expedition. Taught only at Dauphin Island Sea Lab.
- 312. PRACTICAL FISH CULTURE (5). AS ARRANGED. Credit will be arranged for 3 months in a state or federal hatchery or in an approved commercial hatchery or on other phases of fish culture. All students wishing to take this course must obtain permission from the head of the department.
- 315. FISHERIES AND ALLIED AQUACULTURES INTERNSHIP (1-5). S-U graded. Discipline-related learning while employed with cooperating private industry and state and federal agencies.
- 393. UNDERGRADUATE SEMINAR (1). Fall. Consideration of various aspects of fisheries work, career options as related to individual interests and curriculum planning.

## *Fisheries and Allied Aquacultures*

401. LIMNOLOGY (5). LEC. 3, LAB. 6. Pr., CH 104, PS 205, BI 103 or COI. Spring. Biological, chemical and physical factors affecting aquatic life.
402. FISH HEALTH MANAGEMENT (5). LEC. 4, LAB. 3. Pr., BI 103 or COI. Spring. Parasitic, bacterial and viral diseases of fish and economically important crustacean and molluscan species. Emphasis on management practices to control diseases.
423. WATER QUALITY MANAGEMENT IN AQUACULTURE (5). LEC. 5. Pr., CH 203, 208 or COI. Fall. Chemical and biological aspects of water quality are presented. Lectures stress fundamental concepts applicable to a number of water management fields. Special effort is made to develop relationships between water quality and fish culture and practical information on water quality management is presented.
425. MANAGEMENT OF AQUATIC FLORA IN FISHERIES AND AQUACULTURE (5). LEC. 3, LAB. 6. Pr., BI 102 or COI. Summer, odd years. The role of aquatic vegetation in fish production, its utilization and control.
454. HATCHERY MANAGEMENT I (5). Pr., FAA 511. Winter. Warm-water fish seed production systems.
455. HATCHERY MANAGEMENT II (5). LEC. 2, LAB. 9. Pr., FAA 454. Spring. Utilization of modern advances in induced and natural warm-water fish spawning.
498. SPECIAL PROBLEMS IN FISHERIES AND AQUACULTURES (1-5). Pr., senior standing. A student can register for a total of not more than five hours credit.

### ADVANCED UNDERGRADUATE AND GRADUATE

501. COMMERCIAL AQUACULTURE (3). LEC. 3. Pr., BI 103. Winter. Status and potential of commercial aquatic farming in Alabama and the Southeastern United States; resources required for diversification of agriculture through aquatic crops and their integration with traditional land crops.
506. CATFISH PRODUCTION (5). Summer, even years. Pr., BI 103 or COI. Principles and practices of farm commercial catfish production. Offered as week-long short course at Auburn with preparatory reading and additional day field trip.
510. ORGANIZATION, PROGRAMMING AND IMPLEMENTATION OF AQUACULTURAL EXTENSION (3). LEC. 1, LAB. 6. Pr., AEC 202 or equivalent. Summer. Concepts and practices pertaining to aquacultural extension organization, administration, program development and implementation in the U.S. and developing countries.
511. PRINCIPLES OF AQUACULTURE (5). LEC. 5. Pr., BI 103 and junior standing. Winter. Principles underlying aquatic productivity and levels of management as demonstrated by present practices of fish culture around the world.
519. MARINE AQUACULTURE (9). Pr., ZY 401, FAA 538 or ZY 538. Summer. An introduction to principles and technologies applied to the culture of commercially important marine organism. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi.
520. AQUACULTURAL PRODUCTION I (5). LEC. 3, LAB. 8. Pr., BI 103. Spring. Farm organization and operation. Development of skills and attitudes of applied, practical aquaculture emphasizing facility organization and scheduling, equipment use, establishing fish pond populations and crop management in ponds and other culture facilities.
521. AQUACULTURAL PRODUCTION II (5). LEC. 3, LAB. 8. Pr., BI 103. Summer. Application and practice of aquacultural technology and management emphasizing fish health, nutrition, hatchery operations, water quality and general environmental management.
522. AQUACULTURAL PRODUCTION III (5). LEC. 3, LAB. 8. Pr., BI 103. Fall. Advanced field application of aquacultural practices emphasizing fish inventory, harvesting and transporting, pest management and aquacultural practices assessment.
523. AQUACULTURE PRODUCTION IV (5). LEC. 3. Pr., FAA 580, 521 and 522. Winter. Analysis and evaluation of yearly aquaculture production data and appraisal of the operations profitability. Execution and presentation of an annual aquaculture work plan based on yearly culture expenses.
530. POND CONSTRUCTION (5). LEC. 2, LAB. 9. Fall. Principles and practice of site selection, design and construction of aquacultural facilities with emphasis on ponds.
536. MANAGEMENT OF SMALL IMPOUNDMENTS (5). LEC. 3, LAB. 8. Pr., BI 103. Spring. Consideration of the species of fish used in management of small impoundments, species balance, population balance analysis, methods of correcting unbalanced conditions, renovation of old impoundments and related problems of water management.
537. FISHERIES BIOLOGY (3). Pr., BI 103. Winter. An introduction to the study of vital statistics of fish populations.
538. GENERAL ICHTHYOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103. Fall. Survey of functional morphology, classification and distribution of fishes. Introduction to faunistic literature of North America and the world. Identification of fishes from the Gulf of Mexico and North American fresh waters.
539. FISHERIES BIOLOGY LABORATORY (2). LAB. 6. Pr., FAA 537 or COI. Winter. Laboratory exercises in sampling, (bias, precision, accuracy) population estimation, age and growth, mortality and population dynamics models.
542. MARINE FISHERIES MANAGEMENT (6). Pr., COI. Summer. An overview of practical marine fishery management problems. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi.
550. MARINE ICHTHYOLOGY (9). Pr., ZY 306, FAA 538 or ZY 538, and/or COI. Summer. General background in the biology of marine fishes. Emphasis placed on the principles involved in the classification and taxonomy of marine and estuarine fishes. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi.

### Foreign Languages (FL)

Professors Alvarez, DiOrto, Escarpanter, Henkels, Madrigal and Spencer  
Associate Professors Glaze, Head, Buck, Helmke, Latimer,  
Millman, Morris and Warbington  
Assistant Professors Katainen, Mazaheri, Mitrevski, Nadar, Pozin,  
Raby, Wolverton and Zemke

It is to the student's advantage to begin foreign language at the highest possible level because by so doing he can gain college credits through advanced placement. On the basis of the Foreign Language Department's evaluation of his previous foreign language training and/or test scores, he may enter the second, third or fourth quarter course in a language. If he makes a grade of C or higher, he will receive 10, 15 or 20 hours, respectively (5 credit hours for the course and 5, 10 and 15 hours, respectively, for advanced placement). If the student is well enough prepared, he may enter at a level higher than the fourth quarter, but he will not receive more than 15 hours through advanced placement.

If he does not earn at least a C, he will not be granted advanced placement credit. He may then enter the language at a lower level, re-enter at the same level or attempt another approved language.

Credits earned through advanced placement may be applied toward graduation as well as toward foreign language requirements in various curricula.

While eligible for advanced placement as indicated above, students who are native speakers in a foreign language may begin courses in that language only at the 300-level or higher - excluding conversation courses altogether - if they have received substantial academic preparation in that same language (such as the French Baccalaureat, the German Abitur, the Spanish Bachillerato or higher).

Students who are either foreign or U.S. ethnic native speakers in a foreign language, but with minimal or limited academic preparation therein, may begin courses in that language only at the 200-level or higher. If special situations arise, such as foreign language learning through extensive residence abroad, the advisor for the specific language involved will make an appropriate entry level determination, within the framework of these guidelines, upon request of the instructor in whose class the student is enrolled.

\*This course is offered only in the Auburn Abroad Program.

\*\*This course will carry five quarter hours of credit only when taken in the Auburn Abroad Program.

### LANGUAGE PROFICIENCY, INTERNSHIPS AND HONORS COURSES

- 177-178. READING PROFICIENCY IN RUSSIAN. (3). Pr. FL 177 for FL 178 or COI. Winter and Spring. Primarily for graduate students, who should consult their advisors for specific departmental language requirements. FL 178 channels students into their field of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S-U grade only.
391. LYRIC DICTION PROFICIENCY IN FRENCH, GERMAN, ITALIAN. (3). Winter. Stress on phonetics and prosody. Primarily for undergraduate students in music seeking technical control of lyric diction and prosody in French, German and Italian. May be used for foreign language students for elective credit only. This course does not substitute for the three quarters of foreign language required for the Bachelor of Music degree. May be repeated without credit.
471. HONORS THESIS. (3-6). A requirement for the honors student. Directed readings and research terminating in a thesis. May be repeated once for a maximum of six hours credit.
499. FOREIGN LANGUAGE INTERNATIONAL TRADE INTERNSHIP (1-6). Pr., junior standing and COI. Specific number of hours and applicability toward major to be determined in consultation with the advisor. May be repeated for a maximum of six credits.
501. DIRECTED READINGS (1-5). Directed readings in literature written by women, excluding American and English authors.
502. SEMINAR ON WOMEN AUTHORS (3). Seminar on women authors, excluding American and English writers.

### LATIN (LN)

- 101-102-103. FIRST YEAR LATIN I-II-III (5-5-5). LN 101 pr. for 102; LN 102 pr. for LN 103. Fundamentals of Latin; language skills stressed with increasing emphasis on reading, including selections from ancient authors.
- 201-202-203. SECOND YEAR LATIN I-II-III (5-5-5). Pr., LN 103 or equivalent. LN 201 pr. for 202; LN 202 pr. for 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Review of Latin grammar and syntax and survey of Latin literature through selected readings of authors primarily from the Golden and Silver Ages, 80 B.C. - ca. 140 A.D.

## FRENCH (FR)

- 101-102-103. FIRST YEAR FRENCH I-II-III (5-5-5). FR 101 pr. for 102; FR 102 pr. for 103. Fundamentals of French; language skills stressed with progressive emphasis on conversation. Exposure to French civilization.
- 111-112. READING PROFICIENCY IN FRENCH. (3). Pr., FR 111 for FR 112 or COI. Winter and Spring. Primarily for graduate students, who should consult their advisors for specific departmental language requirements. FR 112 channels students into their field of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S-U grade only.
220. FRENCH PHONETICS AND PRONUNCIATION (1) Pr., FR 101 or equivalent. Introduction to French phonetics and practice in basic French pronunciation patterns.
- 201-202-203. SECOND YEAR FRENCH I-II-III (5-5-5). Pr., FR 103 or equivalent. FR 201 pr. for 202; FR 202 pr. for 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Language skills stressed; structural review and composition; reading in French literature; exposure to French civilization.
301. FRENCH CONVERSATION (3 OR 5\*\*). Pr., FR 203 or equivalent. Fall. Practice in spoken, everyday French, based on texts and situations concerning contemporary life especially in France. May be repeated once for credit but counted only once toward a major.
302. FRENCH COMPOSITION (3 OR 5\*\*). Pr., FR 203 or equivalent. Winter. Practice in writing letters, brief articles, themes and reports, based on original composition and on translation. May be repeated once for credit but counted only once toward a major.
303. FRENCH CIVILIZATION (3). Pr., FR 203 or equivalent. Spring. Consideration of topical aspects of the cultural heritage of France, as reflected in present day life patterns, traditions and institutions.
304. FRENCH PHONETICS AND DICTION (3 OR 5\*\*). Pr., FR 203 or equivalent. Spring. Introduction to the basic principles of French phonetics and diction through sound recognition, discrimination and intensive practice.
311. SURVEY OF FRENCH LITERATURE I (3 OR 5\*\*). Pr., FR 203 or equivalent. Fall. Readings in French literature from the Middle Ages through the 18th century with particular emphasis on the 17th and 18th centuries.
312. SURVEY OF FRENCH LITERATURE II (3 OR 5\*\*). Pr., FR 203 or equivalent. Winter. Readings in French literature from the 19th and 20th centuries.
321. BUSINESS FRENCH (3). Pr., FR 203 or equivalent. Intensive practice in preparing commercial correspondence and reading contracts, agreements and related documents in French. Emphasis will be placed on the acquisition of a business-oriented vocabulary.
331. SPECIAL TOPICS IN FRENCH LITERATURE CULTURE OR LANGUAGE (3 OR 5\*\*). Pr., FR 203 or equivalent. Focus on special aspects of French literature or culture along with social, political, intellectual issues and cultural reflections or an in-depth study of French syntax, morphology or phonetics. The specific focus will be announced at least one quarter prior to its being scheduled. May be repeated once for credit.
421. FRENCH FOR INTERNATIONAL TRADE (4). Pr., FR 321 or equivalent. Continues topics in FL 329. Practical exercises in preparing and translating trade correspondence and documents in French, as well as assigned group work and case studies under simulated real-life pressures.
432. INDEPENDENT WORK IN FRENCH (3 OR 5\*\*). Pr., four 300-level French courses or equivalent. Directed study in area of special interest, for the superior student in French. May be repeated once for credit.
433. FRENCH CONTINUING CONVERSATION (1). Pr., FR 301 and 302 or equivalent. Continuing practice in spoken French to maintain and upgrade proficiency while completing other requirements for graduation. May not be counted toward a major, but may be repeated once for credit.
434. FRENCH CONTINUING COMPOSITION (1). Pr., FR 301 and 302 or equivalent. Continuing practice in written French to maintain and upgrade proficiency while completing other requirements for graduation. May not be counted toward a major, but may be repeated once for credit.

## GERMAN (GR)

- 101-102-103. FIRST YEAR GERMAN I-II-III (5-5-5). LEC. 4, LAB. 2. GR 101 pr. to 102; 102 pr. to 103. Fundamentals of German. Stress on language skills, with progressive emphasis on conversation. Exposure to Germanic civilization.
- 111-112. READING PROFICIENCY IN GERMAN. (3). Pr., GR 111 for 112 or COI. Winter and Spring. Primarily for graduate students, who should consult their advisors for specific departmental language requirements. GR 112 channels students into their fields of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S-U grade only.
- 201-202-203. INTERMEDIATE GERMAN I-II-III (4-4-4) or (5-5-5\*\*). Pr., GR 103 or equivalent. GR 201 pr. to 202; 202 pr. to 203. Exceptions to the sequence may be granted by departmental consent or when course offerings so require. Stress on language skills; structural review and composition; readings in German literature and exposure to German civilization.
211. GERMAN CONVERSATION — MANNHEIM (5). Pr., GR 253 or COI. Practice in spoken everyday German, based on texts and situations concerning contemporary life in Germany or other German-speaking countries.
212. GERMAN COMPOSITION — MANNHEIM (5). Pr., GR 253 or COI. Practice in writing letters, brief articles, themes and reports based on original compositions.
213. MODERN GERMANY — MANNHEIM (5). Pr. GR 253 or COI. Political and economic development of Germany since 1945.
301. BEGINNING GERMAN COMPOSITION AND CONVERSATION (3). Pr., GR 203. Fall. Concentration on writing and speaking skills. Review of selected segments of grammar.

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302. INTERMEDIATE GERMAN COMPOSITION AND CONVERSATION (3). Pr., GR 301 or COI. Winter. Further development of writing and speaking skills. Continued review of selected segments of grammar.
303. ADVANCED GERMAN COMPOSITION AND CONVERSATION (3). Pr., GR 302 or COI. Spring. Intensive practice and refinement of writing and speaking skills. Strategies of vocabulary acquisition and retention.
305. ADVANCED CONVERSATION — MANNHEIM (5). Pr., GR 257 or COI. Discussions based on utilization of television news broadcasts and documentaries.
307. ADVANCED COMPOSITION — MANNHEIM (5). Pr., GR 258 or COI. Practice in writing business letters and other forms of business communications.
309. GERMAN CURRENT AFFAIRS — MANNHEIM (5). Pr., GR 259 or COI. Discussions and reports on current affairs using a variety of newspapers and journals.
311. CULTURE AND CIVILIZATION I (3). Pr., GR 203. Fall. Social, political and cultural history of Germany from the Germanic tribes to 1815.
312. CULTURE AND CIVILIZATION II (3). Pr., GR 203. Winter. Social, political and cultural history of Germany from 1815 to the present.
313. INTRODUCTION TO LITERATURE (3). Pr., GR 312 or COI. Spring. Introduction to basic literary genres and major figures in German literature. Familiarization with literary methodologies and bibliographical tools.
314. SEMINAR IN GERMAN LITERATURE (3). Pr., GR 201 or equivalent. Summer. Readings in German literature from selected periods. Normally offered in Summer Quarter only.
401. BUSINESS GERMAN (3 or 5\*\*). Pr., GR 312 or COI. Intensive practice in preparing commercial correspondence and reading contracts, agreements and related documents in German. Emphasis will be placed on the acquisition of a business-oriented vocabulary.
402. GERMAN FOR INTERNATIONAL TRADE (3 or 5\*\*). Pr., GR 401 or equivalent. Practice in handling, preparing and translating international trade correspondence and documents in German. Development of case studies and other realistic international trade group work in German and English, under simulated real-life pressures.
403. SELECTED TOPICS IN GERMAN LITERATURE, LANGUAGE AND CULTURE (3). Pr., four 300-level German courses. May be repeated for credit when topic changes.
407. INDEPENDENT WORK IN GERMAN (3 or 5\*\*). Pr., at least one 400-level German course and COI. Directed study in area of special interest for the superior student in German. May be repeated once for credit.
408. GERMAN CONTINUING CONVERSATION (1). Pr., four 300-level German courses, including GR 301, 302, 303 or equivalent. Continuing practice in spoken German to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit, but counted only once toward a major.
409. GERMAN CONTINUING COMPOSITION (1). Pr., four 300-level German courses, including GR 301, 302, 303 or equivalent. Continuing practice in written German to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit, but counted only once toward a major.
411. GERMAN CLASSICISM (3). Pr., four 300-level German courses or equivalent. Alternate Fall. Consideration, analysis and criticism of German writing of the classical period.
412. GERMAN ROMANTICISM (3). Pr., four 300-level German courses or equivalent. Alternate Winter. Consideration, analysis and criticism of German Romantic writing.
413. GERMAN REALISM AND NATURALISM (3). Pr., four 300-level German courses or equivalent. Alternate Spring. Consideration, analysis and criticism of German writing of Realism and Naturalism.
421. GERMAN DRAMA (3). Pr., four 300-level German courses or equivalent. Alternate Fall. Consideration, analysis and criticism of selected German theater.
422. 20TH-CENTURY GERMAN LITERATURE (3). Pr., four 300-level German courses or equivalent. Alternate Winter. Consideration, analysis and criticism of selected German prose prior to 1945.
423. CONTEMPORARY GERMAN LITERATURE (3). Pr., four 300-level German courses or equivalent. Alternate Spring. Consideration, analysis and criticism of selected German writing since 1945.
499. FOREIGN LANGUAGE INTERNATIONAL TRADE INTERNSHIP IN GERMAN (1-6). Pr., junior standing and COI. Specific number of hours and applicability toward major to be determined in consultation with the advisor. May be repeated for a maximum of six credits.

## ITALIAN (IT)

- 101-102-103. FIRST YEAR ITALIAN I-II-III (5-5-5). LEC. 4, LAB. 2. IT 101 pr. to 102; 102 pr. to 103. Fundamentals of Italian. Language skills stressed (comprehension, reading, oral and written communication, grammar). Exposure to Italian culture and civilization.
- 201-202-203. SECOND YEAR ITALIAN I-II-III (5-5-5). LEC. 4, LAB. 2. Pr., IT 103 or equivalent. PT 201 pr. to 202; 202 pr. to 203. (Exceptions to this sequence may be granted by departmental consent or when course offerings so require.) Stress on language skills; structural review and composition; readings in Italian literature and exposure to Italian culture and civilization.
399. SPECIAL TOPICS IN ITALIAN (1-5). Supplementary instruction concurrent with experience in some field of Italian language, literature and culture. Credit evaluation determined by the Italian faculty on the basis of appropriateness and intensity of the activity. A written report or a test is required. May be repeated for a maximum of 10 hours.



# PORTUGUESE (PT)

- 101-102-103. FIRST YEAR PORTUGUESE I-II-III (5-5-5). PT 101 pr. to 102; 102 pr. to 103. Fundamentals of Portuguese. Stress on language skills; progressive emphasis on conversation. Exposure to Luso-Brazilian civilization.
- 201-202-203. SECOND YEAR PORTUGUESE I-II-III (5-5-5). Pr., PT 163 or equivalent. PT 201 pr. to 202; 202 pr. to 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Stress on language skills; structural review and composition; readings in Luso-Brazilian literature. Exposure to Luso-Brazilian civilization.

# RUSSIAN (RU)

- 101-102-103. FIRST YEAR RUSSIAN I-II-III (5-5-5). RU 101 pr. to 102; 102 pr. 103. Fundamentals of Russian. Stress on language skills; progressive emphasis on conversation. Exposure to Russian civilization.
- 111-112. BEGINNING RUSSIAN FOR READING COMPREHENSION I-II (3-3). RU 111 or equivalent, pr. to 112. Not open to students who have completed RU 101-103 or above. Exceptions may be granted by departmental consent. Emphasis on acquiring reading skills in Russian. Reading from contemporary Soviet print media.
- 201-202-203. SECOND YEAR RUSSIAN I-II-III (5-5-5). Pr., RU 103 or equivalent, RU 201 pr. to 202; 202 pr. to 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Stress on language skills; structural review and composition. Readings in Russian literature; continued exposure to Russian civilization.
274. INTRODUCTION TO RUSSIAN CULTURE (in English) (5). Intensive exposure to Russian culture from the 10th century to the Revolution, as reflected in the fine arts and literature. Emphasis on geographic, social, artistic, spiritual and political forces in the shaping of Russian culture and its contribution to world cultures. Frequent guest lecturing by faculty from other departments.
275. INTRODUCTION TO SOVIET CULTURE (in English) (5). Intensive introduction to Soviet culture from the Revolution to the present, as reflected in the fine arts and literature. Emphasis on the social, artistic, spiritual and political forces in the shaping of Soviet culture. Frequent guest lecturing by faculty from related departments and programs.
301. RUSSIAN CONVERSATION (3). Pr., RU 203 or equivalent. Practice in spoken Russian, based on reading of literary texts and on situations concerning contemporary life in the Soviet Union.
302. RUSSIAN COMPOSITION (3). Pr., RU 203 or equivalent. Practice in writing letters, brief articles, themes and reports, based on original compositions, literary texts and other topics.
303. RUSSIAN CIVILIZATION (3). Pr., RU 203 or equivalent. Review of the cultural heritage of the Russian language as reflected in literature and folklore.
351. RUSSIAN LITERATURE FROM 1820-1860 IN TRANSLATION (3). Literary history of the period: selected works by Pushkin, Lermontov, Gogol, Goncharov, Turgenev.
352. RUSSIAN LITERATURE FROM 1860-1917 IN TRANSLATION (3). Dostoevsky, Tolstoy, Chekhov.
353. SOVIET RUSSIAN LITERATURE FROM 1917 TO THE PRESENT IN TRANSLATION (3). Analysis and criticism of literary movements and selected writers.
399. SPECIAL TOPICS IN RUSSIAN (1-5). Supplementary instruction concurrent with experience in some field of Russian language, literature and culture. Credit evaluation determined by the Russian faculty on the basis of appropriateness and intensity of the activity. A written report or a test is required. May be repeated for a maximum of 10 hours.

# SPANISH (SP)

- 101-102-103. FIRST YEAR SPANISH I-II-III (5-5-5). SP 101 pr. to 102; 102 pr. to 103. Fundamentals of Spanish. Language skills stressed with progressive emphasis on conversation. Exposure to Hispanic civilization.
- 201-202-203. SECOND YEAR SPANISH I-II-III (4-4-4). Pr., SP 103 or equivalent. SP 201 pr. to 202; 202 pr. to 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Language skills stressed; structural review and composition; reading in Spanish literature; exposure to Hispanic civilization.
238. INTERMEDIATE SPANISH CONVERSATION (5\*). Pr., SP 103 or equivalent or approval of Spanish Advisor. Summer. Intensive practice in the spoken language with simultaneous review of vocabulary and structure. May be repeated once for credit but counted only once toward the major.
239. INTERMEDIATE SPANISH GRAMMAR AND COMPOSITION (5\*). Pr., SP 103 or equivalent or approval of Spanish advisor. Summer. Intensive review of Spanish grammar, with emphasis on problem areas and written practice. May be repeated once for credit but counted only once toward the major.
301. SPANISH PHONETICS (3). Pr., SP 202 or equivalent. Training in practical phonetics with specific course materials determined by the needs of the students.
302. SPANISH SYNTAX (3). Pr., SP 203 or equivalent. Sentence structure in Spanish emphasizing the interrelationship among the various parts.
303. SPANISH CONVERSATION (3 OR 5\*\*). Pr., SP 301 or equivalent. Intensive practice in the spoken language, with simultaneous review of vocabulary and structure. May be repeated once for credit but counted only once toward a major.
304. SPANISH COMPOSITION (3 OR 5\*\*). Pr., SP 302 or equivalent. Practice in writing letters, brief articles, themes and reports, based on original composition and translation. May be repeated once for credit but counted only once toward a major.

305. INTRODUCTION TO HISPANIC LITERATURE (3). Pr., SP 303, 304. Literary genres, rhetorical figures and other literary terms to be applied to the analysis of Spanish and Spanish American texts.
307. SPANISH-AMERICAN COMMUNITY DIALOGUE (3). Pr., SP 303 or 304. Practical Spanish for American public safety personnel with emphasis on learning key phrases useful when handling situations involving authoritative intent, cooperation or offering of assistance. Medical and legal terminology including specific vernacular and idiom variations. Offering Spring, odd years.
309. SEMINAR IN ADVANCED COMPOSITION AND CONVERSATION (3 or 5\*\*). Pr., SP 303, 304 or equivalent. Summer. Intensive practice in composition and conversation through original and directed themes as well as through oral presentations. May be repeated once for credit.
310. SPANISH CIVILIZATION I (3). Pr., SP 303, 304 or equivalent. Alternate Fall. Intensive exposure to the culture of Spain up to 1700 as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization and its contribution to world cultures.
311. SPANISH CIVILIZATION II (3). Pr., SP 303, 304 or equivalent. Alternate Winter. Intensive exposure to the culture of Spain from 1700 to 1900, as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization and its contribution to world cultures.
312. SPANISH CIVILIZATION III (3). Pr., SP 303, 304. Intensive exposure to the culture of Spain from 1900 to the present, as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization and its contribution to world cultures.
313. SPANISH AMERICAN CIVILIZATION I (3). Pr., SP 303, 304 or equivalent. Alternate Fall. Intensive exposure to the culture of pre-Colombian Spanish America to Independence as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish American civilization and its contribution to world cultures.
314. SPANISH AMERICAN CIVILIZATION II (3). Pr., SP 303, 304 or equivalent. Alternate Winter. Intensive exposure to the culture of Spanish America from Independence to the 20th century as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish American civilization and its contribution to world cultures.
315. SPANISH AMERICAN CIVILIZATION III (3). Pr., SP 303, 304 or equivalent. Alternate Spring. Intensive exposure to the culture of contemporary Spanish America as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish American civilization and its contribution to world cultures.
316. SEMINAR IN SPANISH CIVILIZATION (5\*). Pr., SP 303, 304 or equivalent. Summer. An intensive study of Spanish civilization through Spanish art. Students will visit various art museums in Spain. May be repeated for credit.
320. BUSINESS SPANISH (3). Pr., SP 303, 304 or equivalent. Intensive practice in preparing commercial correspondence and reading contracts, agreements and related documents in Spanish. Emphasis will be placed on the acquisition of a business-oriented vocabulary.
321. SPANISH FOR INTERNATIONAL TRADE (3). Pr., SP 320 or equivalent. Practice in handling, preparing and translating international trade correspondence and documents in Spanish. Development of case studies and other realistic international trade group work in Spanish and English, under simulated real-life pressures.
322. COMMERCIAL SPANISH TRANSLATION (3). Pr., SP 303, 304 or equivalent. Spring. The problems and approaches to commercial translation emphasizing the primary areas in which translations are most used: business letter, export-import documentation and conversation.
330. SEMINAR IN BUSINESS SPANISH (5\*). Pr., SP 303, 304 or equivalent. Summer. Intensive study of the specialized spoken and written business terminology of Spanish. Special emphasis on practical usage through direct contact with the business environment of Spain during residence in Madrid. May be taken as substitution for SP 320, with consent of advisor.
331. SEMINAR IN SPANISH FOR INTERNATIONAL TRADE (5\*). Pr., SP 320 or 330 or equivalent. Summer. Intensive study in handling, preparing and translating international trade correspondence and documents in Spanish. Special emphasis on practical applications through direct contact with the business environment of Spain during residence in Madrid. May be taken as substitution for SP 321, with consent of advisor.
401. SEMINAR IN PRACTICAL PHONETICS (3 or 5\*\*). Pr., SP 301 or 302 or equivalent. Advanced training in practical phonetics with specific course assignments determined by needs of students. May be repeated once for credit.
408. SPANISH CONTINUING CONVERSATION (1). Pr., SP 301 or 302 or equivalent. Continuing practice in spoken Spanish to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit.
409. SPANISH CONTINUING COMPOSITION (1). Pr., SP 301 or 302 or equivalent. Continuing practice in written Spanish to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit, but counted only once toward a major.
410. SURVEY OF SPANISH LITERATURE TO 1700 (3). Pr., SP 305 or equivalent. Alternate Fall. Development of Spanish literature from its beginnings through the Golden Age (1700).
411. SURVEY OF MODERN SPANISH LITERATURE (3). Pr., SP 305 or equivalent. Alternate Winter. Panorama of Spanish literature between 1700 and 1900.
412. SURVEY OF CONTEMPORARY SPANISH LITERATURE (3). Pr., SP 305 or equivalent. Alternate Spring. Panorama of the development of contemporary Spanish literature from the Generation of '98 to the present.
413. SURVEY OF SPANISH AMERICAN LITERATURE I (3). Pr., SP 305 or equivalent. Alternate Fall. Panorama of Spanish American literature from the discovery of America to Modernism.

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414. SURVEY OF SPANISH AMERICAN LITERATURE II (3). Pr., SP 305 or equivalent. Alternate Winter. Panorama of Spanish American literature from Modernism to the present.
418. SEMINAR IN HISPANIC LITERATURE (3 or 5\*\*). Pr., four 300-level Spanish courses or equivalent. Readings in Hispanic literature from selected genres, authors, periods or movements. May be repeated once for credit.
499. INTERNATIONAL TRADE INTERNSHIP IN SPANISH (1-8). Pr., Junior standing and COI.

### CHINESE (CN)

- 101-102-103. FIRST YEAR CHINESE I-II-III (5-5-5). CN 101 pr. for 102; 102 for 103. Fundamentals of Chinese. Stress on language skills, with progressive emphasis on conversation. Exposure to Chinese civilization.
- 201-202-203. INTERMEDIATE CHINESE I-II-III (5-5-5). Pr. CN 103 or equivalent. CN 201 pr. for 202; 202 pr. for 203. Stress on language skills; structural review and composition; readings in Chinese literature and exposure to Chinese civilization.
284. INTRODUCTION TO CONTEMPORARY CHINESE CULTURE (in English) (3). Emphasis on geographic, social, artistic and spiritual forces in contemporary Chinese culture.
285. INTRODUCTION TO CHINESE CIVILIZATION (in English) (3). Emphasis on literature and arts.

### JAPANESE (JP)

- 101-102-103. FIRST YEAR JAPANESE I-II-III (5-5-5). JP 101 pr. for 102; 102 pr. for 103. Fundamentals of Japanese. Stress on language skills, with progressive emphasis on conversation. Exposure to Japanese civilization.
- 201-202-203. SECOND YEAR JAPANESE I-II-III (5-5-5). Pr., JP 103 or equivalent. JP 201 pr. for 202; 202 pr. for 203. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization.

### FRENCH (FR) ADVANCED UNDERGRADUATE AND GRADUATE COURSES

521. FRENCH FOR INTERNATIONAL TRADE (4). Pr., FR 321 or equivalent. Practice in handling, preparing and translating international trade correspondence, documents and related legal procedures in French. Development of case studies and other international trade group work in French and in English, under simulated real-life pressures.
531. SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS (4 or 5\*\*). Pr., four 300-level French courses or equivalent. Selected readings in French literary genres or movements.
532. SEMINAR IN ADVANCED LANGUAGE SKILLS (4 or 5\*\*). Pr., four 300-level French courses or equivalent. Practice in writing and speaking French. Exercises include compositions and exposes. May be repeated for credit.

### SPANISH (SP) ADVANCED UNDERGRADUATE AND GRADUATE COURSES

501. SEMINAR IN COMPOSITION AND STYLISTICS (3 OR 5\*\*). Pr., four 300-level Spanish courses or equivalent. Advanced training in composition and stylistics with specific course materials determined by needs of students. May be repeated once for credit.
502. SEMINAR IN CONVERSATION AND PHONETICS (3 OR 5\*\*). Pr., four 300-level Spanish courses or equivalent. Advanced training in conversation and phonetics with specific course materials determined by needs of students. May be repeated once for credit.

### COURSES OFFERED ONLY IN AUBURN - ABROAD (FRANCE) (FR)

228. INTERMEDIATE FRENCH CONVERSATION (5). Pr., FR 103 or equivalent or approval of French Advisor. Summer. Intensive practice in the spoken language with simultaneous review of vocabulary and structure. May be repeated once for credit. When combined with FR 229 can count toward the major or minor in lieu of FR 221.
229. INTERMEDIATE FRENCH GRAMMAR AND COMPOSITION (5). Pr., FR 103 or equivalent or approval of French Advisor. Summer. Intensive review of French grammar, with emphasis on problem areas and written practice. May be repeated once for credit. When combined with FR 228 can count toward the major or minor in lieu of FL 221.
353. FRENCH CIVILIZATION (5). Pr., FR 203 or equivalent. Summer. Consideration of selected aspects of French civilization in the light of historical cultural developments.
553. ADVANCED FRENCH CIVILIZATION (5). Pr., four 300-level French courses or equivalent. Summer. An in-depth study of French civilization, with emphasis on historical, political and cultural influences. May be repeated for credit.

### COURSES OFFERED ONLY IN AUBURN - ABROAD (GERMANY) (GR)

104. INTENSIVE GERMAN LANGUAGE (5). Summer. Introduction to German. Basic German grammar and conversation. May be substituted for GR 103.
204. INTERMEDIATE GERMAN (5). Pr., GR 103 or equivalent or approval of German Advisor. Summer. Grammar, conversation and reading. Intensive practice in German with simultaneous review of vocabulary and structure. Does not substitute for GR 201, 202 or 203, but may count toward the major or minor in German.
304. GERMAN CONVERSATION (5). Pr., GR 203 or COI. Summer. Practice in spoken, everyday German, based on texts and situations concerning contemporary life in Germany or other German-speaking countries.
306. GERMAN COMPOSITION (5). Pr., GR 203 or COI. Summer. Practice in writing letters, brief articles, themes and reports based on original composition and translation.

## Forest Engineering (FYE)

Professors Thompson and Turnquist  
Associate Professors Lanford and Tufts  
Assistant Professors Brinker, Taylor and Wilhoit  
Adjunct Assistant Professor Stokes

101. INTRODUCTION TO AGRICULTURAL AND FOREST ENGINEERING (1). LEC. 1, LAB. 2. S-U graded. Winter. Perspectives on the agricultural and forest engineering profession. Creative design and the engineer's approach to problem solving. Introduction to the technical specialties of engineering for agriculture and forestry and career opportunities. (Same as AN 101).
130. INTRODUCTION TO ENGINEERING DESIGN FOR BIOLOGICAL SYSTEMS. (1). LAB. 3. Spring. A supervised engineering design project to design components and/or systems to solve a real problem in an agricultural or forestry related industry. Open only to students classified 01 or 02. (Same as AN 130).
201. ENGINEERING PRINCIPLES IN BIOLOGICAL SYSTEMS (5). LEC. 4, LAB. 3. Pr., MH 161. Coreq., CSE 120. Fall. Engineering concepts and principles applied to agricultural and forest problems. Creativity and design. Unit operations of agricultural and forest engineering. (Same as AN 201).
300. INTRODUCTION TO FORESTRY OPERATIONS (2). LAB. 6. Pr., BI 102, MH 169. Summer. Introduction to basic field and manufacturing operations in the forest industry.
304. FOREST SURVEYING (5). LAB. 15. Pr., MH 162 or 169. Summer. Basic concepts and procedures of surveying as applied to forestry.
311. MOBILE EQUIPMENT DESIGN FUNDAMENTALS (4). LEC. 3, LAB. 3. Pr., EGR 201, 235, MH 265 and AN/FYE 201 or COI. Winter. Basic engineering analysis, synthesis and design concepts applied to mobile field equipment and machines for agricultural, forestry and industrial use. Includes engine performance, power transmission, traction mechanics, mechanics of machines and machine-operator interface and safety. (Same as AN 311).
313. LAND AND WATER CONSERVATION ENGINEERING (3). LEC. 2, LAB. 3. Pr., AN/FYE 315. Spring. Rainfall-runoff relationships. Soil erosion and its prediction and control. Hydraulic structures and open channel flow. (Same as AN 313).
315. PROCESS ENGINEERING FOR FOREST SYSTEMS (5). LEC. 4, LAB. 3. Pr., AN/FYE 201, CE 310, EGR 201. Winter. Design principles and equipment selection for crop, food and feed storage, preservation and manufacturing. Thermal processing, curing, drying, refrigeration, materials handling, pumps, fans and storage processing. (Same as AN 315).
370. FOREST ROADS DESIGN (3). LEC. 2, LAB. 3. Pr., FYE 304. Winter. Design, construction and maintenance of secondary and temporary road systems. Not open to engineering students.
401. FOREST MACHINE DESIGN (3). LEC. 3. Pr., AN/FYE 311, EGR 207. Spring. Engineering analysis and design of forest machinery. Includes engineering characteristics of logs related to machine design, site preparation and planting equipment review, felling equipment design, loader kinematics, cable systems mechanics and machine reliability (Same as AN 401).
402. FOREST TRANSPORTATION SYSTEMS DESIGN (3). LEC. 2, LAB. 3. Pr., FYE 304, 313. Fall. Design of the forest transportation system including pre-construction planning, horizontal and vertical alignment, earthwork volume and distribution analysis and drainage control structures for the road network and specifications for the vehicles that will use the network. (Same as AN 402).
403. APPLIED STRUCTURAL ANALYSIS AND DESIGN (3). LEC. 2, LAB 3. Pr., EGR 207. Fall. Analysis and design of structural systems of agriculture and forestry. (Same as AN 403).
430. ENGINEERING DESIGN FOR BIOLOGICAL SYSTEMS I (4). LEC. 3, LAB. 3. Pr., AN/FYE 403, senior standing, COI. Winter. Design of equipment, structures and systems for food, feed, fiber, forest products and animal production and processing utilizing engineering principles. (Same as AN 430).
490. SPECIAL TOPICS (2-5). (CREDIT TO BE ARRANGED.) Pr., COI. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as AN 490).

## ADVANCED UNDERGRADUATE AND GRADUATE

509. HYDRAULIC CONTROL SYSTEMS (5). LEC. 4, LAB. 3. Pr., CE 310 or ME 340. Design and analysis of hydraulic systems. Application of sizing hydraulic pumps, motors, valves and accessories for industrial and mobile systems. Laboratory emphasizes hands-on testing and functional analysis of components and systems. Including measurement of pressure, flow and power. (Same as AN 509).
530. ENGINEERING DESIGN FOR BIOLOGICAL SYSTEMS II (4). LEC. 2, LAB. 6. Pr., AN/FYE 430 and COI. Spring. A supervised engineering design project to design components and/or systems to solve a real problem in an appropriate industry. Utilization of many engineering principles is required. (Same as AN 530).
570. HARVESTING (3). LEC. 2, LAB. 3. Pr., FY 319, 523, 540. Winter. Harvesting systems, cost analysis and environmental impacts.
571. ADVANCED HARVESTING (2). LEC. 2. Pr., FYE 570 or COI. Spring. Analysis of harvesting systems with attention to solutions of specific problems in harvesting.
572. ENGINEERING DESIGN OF FOREST HARVESTING SYSTEMS (4). LEC. 3, LAB. 3. Pr., FYE 401, 402, FY 540. Spring. Design of optimal forest harvest systems from component machines. Emphasizes methods of data collection and analysis, model development and optimization. Topics include: linear regression; queuing theory; simulation; system balance; cost and productivity of components and systems.
590. SPECIAL TOPICS. (CREDIT TO BE ARRANGED.) (2-5). Pr., COI. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as AN 590).

## Forest Management (FY)\*\*

Professors Thompson, Gjerstad, Raper and Wade

Associate Professors Flick, Golden, Kelley, Larsen, Lockaby and South

Assistant Professors Bliss, Caulfield, Chappelka, Davis, DeBrunner, Glover, Jones,

McNabb, Meldahl, Mitchell, Somers and Teeler

Adjunct Professor Mexal

Adjunct Associate Professor Boyer

Adjunct Assistant Professors Carter, McMahon, Michael, Miller and Thornton

\*\*Prerequisites may be waived by COI concerned, for junior and senior students in other departments.

200. INTRODUCTION TO FORESTRY AND FOREST PRODUCTS (3). LEC. 3. Historic development of forestry and forest products professions, career opportunities and current technical, social and economic issues influencing forestry and forest products.
220. COMPUTER APPLICATIONS IN FORESTRY (3). LEC. 2, LAB. 3. Pr., MH 169. An introduction to computer programming using microcomputers and BASIC language. Mainframe and telecommunications are introduced.
302. INTRODUCTION TO FOREST BIOLOGY (2). LAB. 6. Pr., BI 102, MH 169. Summer. Introduction to biological principles as used in management of forest properties. Emphasis on ecology.
305. FIELD MENSURATION (4). LAB. 12. Pr., FY 220, MH 169. Summer. Basic concepts and procedures for measuring trees and stands, units of measure used in forestry; application of log rules and volume tables; condition class mapping; elementary timber estimating.
306. INTRODUCTION TO FOREST MANAGEMENT (2). LAB. 6. Pr., BI 102, MH 169. Summer. Introduction to basic forest management, including concepts of multiple use.
310. DENDROLOGY (4). LEC. 2, LAB. 6. Pr., BI 102. Fall. Taxonomy and identification of important forest plants of the United States, including cover types of forest regions.
318. FOREST MEASUREMENT AND THEORY (4). LEC. 2, LAB. 6. Pr., FY 305, FYE 304, BST 215. Winter. Theoretical concepts of tree and log measurements, development of volume tables, sampling theory and design.
319. FOREST GROWTH AND YIELD (5). LEC. 3, LAB. 6. Pr., FY 318. Spring. Factors affecting and mathematical principles of tree and stand growth.
320. FOREST TREE PHYSIOLOGY (3). LEC. 3. Pr., CH 104, FY 302, PS 200 or COI. Fall. Relationship between environmental and genetic factors. Metabolism and growth of individual trees.
323. FOREST ECOLOGY (3). LEC. 2, LAB. 3. Pr., AY 305, FY 318, 320 or COI. Spring. Basic concepts and principles of forest ecology including forest community-environment relationships.
350. FORESTRY FOR WOODLAND OWNERS (5). LEC. 5. Pr., sophomore standing. Fall, Winter, Spring, Summer. (Not open to students in Forestry curricula.) Understanding trees and their value in our economy. The application of forestry principles to management of small woodlands.
400. FORESTRY TOUR (1-3). LAB. (2-9). Tours up to two weeks long to points of outstanding interest to foresters. May be taken more than once if different tours are involved.
417. FOREST PHOTOINTERPRETATION AND REMOTE SENSING (3). LEC. 2, LAB. 3. Pr., MH 161, FYE 304. Geometry of and measurement from vertical aerial photographs; the use of aerial photographs and other remote sensory techniques in forestry.
422. FOREST GEOGRAPHY (2). LEC. 2. Pr., or Coreq. FY 323. Winter, Spring. Silvical characteristics of specific tree species. Major forest types of the U.S.
425. ARTIFICIAL FOREST REGENERATION (3). LEC. 2, LAB. 3. Pr., FY 523 or COI. Presentation and discussion of current problems and practices involved in establishment of plantations in the Southern U.S. Principles of nursery management, tree improvement, seedling symbiology, seedling establishment, vegetation management and site interactions.
427. AIR POLLUTION EFFECTS ON FORESTS (4). LEC. 3, LAB. 3. Pr., FY 320 and 323 or COI. Basic concepts of air pollution effects to forested ecosystems with emphasis on sources, transport, mechanisms of toxicity and relationships to other environmental stresses.
429. FOREST SOILS (4). LEC. 3, LAB. 3. Pr., AY 305 and FY 523. Use of soil science principles in forest management. Principles of forest site evaluation, forest land classification, nutrient cycling, forest fertilization, erosion control, forest soil degradation and plant establishment.
444. FOREST FIRE CONTROL AND USE (2). LEC. 1, LAB. 3. Pr., FY 323 or COI. Winter. Use of fire in land management and protection of forest from wild fire.
446. FOREST PESTS (4). LEC. 3, LAB. 3. Pr., BI 101, 102, FY 320, Junior standing. Major disease and insect pests affecting forest stands, plantations, seed orchards and nurseries. Course covers management alternatives available for control of these pests.
460. WILDLAND RECREATION PHILOSOPHY AND POLICY (3). LEC. 3. Spring. Philosophy and policy of wildland recreation. Laws and traditions at federal, state and local levels of government as well as industrial and other landowners' outlooks and developments relative to wildland recreation.
463. FOREST RECREATION PLANNING AND MANAGEMENT (2). LEC. 2. Pr., FY 302, 306 or COI. Planning for and management of lands which can provide recreational opportunity for people.
465. URBAN FORESTRY (2). LEC. 2. Pr., BI 102. Principles and concepts of tree establishment, management and health in an urban environment.



## Forest Products

- 465L. URBAN FORESTRY LABORATORY (1). LAB. 3. Pr., FY 465 or concurrently. Field experience in urban forestry including completion of an urban forest management project.
482. WOOD PROCUREMENT (2). LAB. 4. Pr., FY 541 or COI. Spring. Principles, problems and practices involved in providing raw material to the forest products industry.
483. INDUSTRIAL WOOD PROCUREMENT PRACTICUM (1). LAB. 3. Pr., FY 305. Coreq., FY 319. Spring. Field and office procedures and strategies involved in purchasing wood for an industrial forestry firm. Course may be taken twice for credit. SU grading only.
485. FOREST MANAGEMENT PRACTICUM (3). LEC. 1, LAB. 6. Pr., FY 541. Definition, analysis and solution of forestry problems. Requires integration of previously learned forestry material in an economic decision making framework.
495. DIRECTED STUDY (1-5 each). Pr., COI and approval of department head, junior standing. Maximum of 10 hours in all areas as credit toward the Bachelor of Science degree. Areas of study defined as in FY 691.
499. HONORS PROJECT (2-5). Senior standing. A problem in the student's area of interest. Will test ability to do thorough library research, field work, data analysis or other tasks related to high level independent work.

## ADVANCED UNDERGRADUATE AND GRADUATE

523. SILVICULTURE (4). LEC. 3, LAB. 3. Pr., FY 323 or senior standing and COI. Methods of controlling establishment, composition, growth and quality of forest stands. Application of ecological principles to manipulation of forest ecosystems to meet specific objectives.
524. FOREST WATERSHED MANAGEMENT (2). LEC. 2. Pr., FY 323 or senior standing and COI. A survey of forest hydrology as a specialized branch of ecology. The use of forests and forestry practices for the regulation of streamflow. An overnight field trip is required.
540. FOREST ECONOMICS (4). LEC. 3, LAB. 3. Pr., U 102, EC 202 or AEC 202, FY 319 or COI. Fall. Marginal analysis applied to forestry. Investment theory and forestry decisions. Theories of resource supply and economics of conservation. The structure and performance of forest products markets. The principles and influence of taxation in forestry. The U.S. as a component of the world forest economy.
541. FOREST MANAGEMENT AND ADMINISTRATION (4). LEC. 3, LAB. 3. Pr., FY 523, 540. Winter. A modern course in quantitative approaches to decision-making in forestry. Models for forest regulation, multiple objective planning and other selective forestry problems. Decision-making in private and public forestry firms/agencies. The administration of large forestry programs and the influence of outside regulations. Course will rely heavily on previous forestry courses.
542. FOREST POLICY (3). LEC. 3. Pr., FY 541 or COI. Spring. Historical review of U.S. Forest Policy. Analysis of social and resource characteristics that have shaped policy issues/decisions at regional and national levels.
548. ADVANCED FOREST ECONOMICS (3). LEC. 3. Pr., FY 540. Winter. Input-output relationships in forest production. Computation of financial maturity of trees and stands. Competition for resources in the management of forest properties. Uses of land and evaluation of intangible values associated with land.
561. TOPICS IN FOREST MEASUREMENTS (2). LEC. 2. Pr., BST 501. Instrumentation, development of volume units and forest inventory for graduate students without forestry background. Graduates only.
590. SEMINAR IN FORESTRY (1). Pr., senior standing. Advanced current literature and recent developments, with written and verbal reports on selected problems.
593. PRACTICUM (1-5). May be repeated not to exceed 10 hours credit. Not open to majors in Forestry curricula. Provides students with experience in Forestry closely relating theory and practice, usually carried out simultaneously.

## Forest Products (FP)

Professors Biblis and Tang

Associate Professors Beals, Carino and Elder

Adjunct Professor Solis

Adjunct Assistant Professors Hse and Price

206. WOOD MEASUREMENTS (3). LEC. 2, LAB. 3. Pr., MH 161. Fall. Wood measurements and tree identification oriented toward the needs of students in Forest Products and Wood Science.
301. INTRODUCTION TO FOREST PRODUCTS AND WOOD SCIENCE (5). LEC. 5. (Not open to students in Forestry curricula.) Introduction to fundamentals in Wood Science and Technology; Utilization and manufacture of major forest products.
302. WOOD AND WOOD PRODUCTS IN FURNITURE AND HOUSE INTERIORS (3). LEC. 3. Spring. Presents an understanding of the relationships between the properties of various wood materials and their function when used as components of furniture and house interiors.
311. STRUCTURE OF WOOD (5). LEC. 3, LAB. 6. Spring. Structure of woods at macroscopic and microscopic level, emphasizing microstructure of cell wall and effect on wood properties. Introduction to microtechniques.
330. SOLID WOOD PRODUCTS (3). LEC. 3. Pr., FP 311. Winter. Manufacturing, specifications and grading of solid wood products derived from forest lands. Field trips will be required.
339. INTRODUCTION TO WOOD SCIENCE (3). LEC. 2, LAB. 3. Pr., FY 310. Winter. The manufacture of lumber, plywood, paper and various composition boards from wood. Modern production technologies used in forest products industries. Identification of important products and woods.

370. WOOD AS AN ART MEDIUM (3). LEC. 1, LAB. 4. For students majoring in the Fine Arts. Winter. Basic technology and properties of wood as applied to its use as an art medium. Wood identification, design of wood forms and effects of moisture on the dimensional stability of wood. Design problems involving wood.
420. FOREST PRODUCTS I (4). LEC. 3, LAB. 3. Pr., FP 339. Spring. Manufacture and proper use of solid wood products, primarily lumber.
474. WOOD GLUING AND COATING (3). LEC. 2, LAB. 3. Pr., FP 311, FP 330. Concurrently. Winter. Types and characteristics of adhesives and wood coating materials. Use of adhesives and wood coating materials in primary and secondary wood products manufacture operations.
475. WOOD-BASED PANEL TECHNOLOGY (3). LEC. 2, LAB. 3. Pr., FP 311, FP 330. Spring. Design, manufacture, properties and application of plywood, particle-board, fiberboard and composite panels.
477. PULP AND PAPER TECHNOLOGY (3). LEC. 2, LAB. 3. Pr., FP 311. Fall. Pulping processes, fiber refining and processing, manufacture of paper, fiber and paper properties, recycling of paper and water requirements and effluent treatment.
478. INTRODUCTION OF WOOD CHEMISTRY (4). LEC. 3, LAB. 3. Pr., CH 203, FP 311. Winter. Chemical composition of wood, chemical analyses of wood components and their derivatives and utilization. Energy from wood and forest residues.

### ADVANCED UNDERGRADUATE AND GRADUATE

513. MICROTECHNIQUES OF HARD MATERIALS (5). LEC. 1, LAB. 12. Pr., FP 311 or COI. Preparation and sectioning of hard materials for microscopic study. Care and use of the sliding microtome and diamond saw, staining, counterstaining and mounting of sections.
521. FOREST PRODUCTS II (4). LEC. 3, LAB. 3. Pr., FP 420. Winter. Manufacture and proper use of veneer and particle based panel products and other composite products.
525. PHYSICAL PROPERTIES OF WOOD (4). LEC. 3, LAB. 3. Pr., PS 206, FP 311. Fall. Wood-moisture relationships, diffusion, permeability, plasticization, density and specific gravity. Thermal, electrical and acoustical properties of wood.
531. MECHANICAL PROPERTIES OF WOOD (4). LEC. 3, LAB. 3. Pr., FP 311. Winter. Mechanical properties of wood, factors affecting the strength of wood, principles used in design of wood structures. Testing procedures.
532. DETERIORATION AND WOOD TREATING PROCESSES (3). LEC. 3. Pr., FP 311. Fall. Biological deterioration of wood and wood products. Wood preservatives and industrial treating processes of wood products. Field trips will be required.
533. WOOD DRYING PROCESSES (3). LEC. 2, LAB. 3. Pr., FP 525. Winter. Physical principles of kiln drying, industry drying methods and procedures, drying defects and prevention.
534. MECHANICS & STRUCTURAL DESIGN WITH WOOD PRODUCTS (4). LEC. 3, LAB. 3. Pr., FP 475, FP 531. Spring. Engineering design and mechanical behavior of solid wood and composite wood structural members as applied to building construction.
535. FOREST PRODUCTS PRODUCTION MANAGEMENT (4). LEC. 3, LAB. 3. Pr., FP 339, 420. Fall. Application of economic-engineering principles to manufacturing solid wood products. Problem solving as related to economic decision making in forest products industry.
536. FOREST PRODUCTS MARKETING (3). LEC. 3. Pr., FP 330, FP 475. Winter. Historical and current analyses of forest products marketing at manufacturing, wholesale and retail level. Applications of marketing systems to forest products industries.
537. POLLUTION PROBLEMS IN THE FOREST INDUSTRY (3). LEC. 3. Senior standing. Spring. Causes and control of pollution problems associated with forest industries. Air, water, noise and solid-waste problems are identified during the conversion of wood and forest residues into forest products and energy. Special topics from industrial members.

### Geography (GY)

Professor Martinson, *Head*,

Associate Professor Dawsey

Assistant Professors Bailey, Hicks, Icenogle and Perritt

102. WORLD GEOGRAPHY (5). Important characteristics of the land and people of the major regions of the world.
214. INTRODUCTION TO PHYSICAL GEOGRAPHY (5). Selected elements of the earth's physical system to include such items as landforms, basic weather elements, soils and vegetation.
215. INTRODUCTION TO HUMAN GEOGRAPHY (5). An introduction to the various subfields of human/cultural geography, including population, agricultural geography, linguistic geography, the geography of religion, ethnic geography and economic and urban geography.
223. FIELD GEOGRAPHY (5). Field mapping, data gathering, sampling procedures, interviewing and research design in physical geography and human geography.
240. INTRODUCTORY CARTOGRAPHY (5). Cartographic technology, spatial data manipulation and generalization and cartographic production and reproduction.
300. CLIMATOLOGY (5). Pr., 10 hours GY or COI. Climate elements, controls and world patterns.
302. ECONOMIC GEOGRAPHY — COMMODITY PRODUCTION (5). Pr., five hours GY or COI. Distribution and environmental relationships of man's principal economic activities.

303. THE SOVIET UNION — LAND AND PEOPLE (5). Survey of the physical environment and cultural development of the region. Natural resources, economic activities, social patterns, political processes, problems and prospects of the Soviet Union.
304. LATIN AMERICA — LAND AND PEOPLE (3). Survey of the physical environment and cultural development of the region. Natural resources, economic activities, social patterns, political processes, problems and prospects of the major Latin American countries.
305. THE UNITED STATES AND CANADA — LAND AND PEOPLE (3). Survey of the region incorporating physical and cultural elements which provide a synthesis of the economic and political processes, developments and prospects for the United States and Canada.
306. EUROPE — LAND AND PEOPLE (3). Regional analysis of Europe from a systematic viewpoint, including among others the physical environment, population distribution, religion, politics and economics. Selected nations will be used for case studies within their regional setting and to illustrate Europe's global relationships.
307. ASIA (3). Introduces students to the regional geography of Asia and provides an analysis of the area including an examination of its physical bases and history of development. Also considered are geographical patterns related to resources, political conditions, economic activity and population, with a focus on the major countries.
308. AFRICA — LAND AND PEOPLE (5). Survey of the physical and cultural geography of Africa with emphasis placed on the regions and countries of greater economic and international importance.
313. AGRO-CLIMATOLOGY. (5). Pr., 10 hours GY or COI. Principles of climatology that are significant for agriculture, with special focus on the southeastern United States.
315. ALABAMA — LAND AND PEOPLE (3). Survey of the physical environment and cultural development of the state. Natural resources, economic activities, social patterns, problems and prospects of the state in its regional setting will be covered.
320. INTERNATIONAL TRAVEL AND TOURISM (3). Environmental and cultural pattern related to tourism, with specific country examples.
325. GEOGRAPHY FORUM (3). Special topics from departmental speakers series.
360. LOCATION ANALYSIS (5). Introduction to the location of economic activity. Analysis of the key variables and a survey of useful techniques for making locational choices.
399. INDEPENDENT READINGS IN GEOGRAPHY (1-6). May be repeated for a maximum of six hours credit. No more than five hours may be taken at one time. Consists of directed readings and reports on topic approved by professor in charge.
400. RESEARCH TECHNIQUES (3). Pr., 20 hours GY or COI. The development of modern geographic thinking with special attention to the methodology employed in the science of geography.
401. THE GEOGRAPHY OF INTERNATIONAL RELATIONS (5). General elective. The interaction between the natural-physical environment and the international activities of world powers. Emphasis on the changing geographic and economic patterns in world affairs.
440. ADVANCED CARTOGRAPHY (5). Pr., GY 240, five hours GY or COI. Develops understanding of theories and practices of modern cartography.
499. GEOGRAPHY APPRENTICESHIP (5). Pr., 10 hours GY or COI. Matches capable geography students with faculty undertaking research projects in order to provide them with practical experience in geographical research. No more than 10 credits may be earned in GY 499 and 599.

#### ADVANCED UNDERGRADUATE AND GRADUATE

500. RESEARCH TECHNIQUES (5). Pr., 25 hours GY or COI. To develop effective thinking skills, to evaluate written materials in geography, to review geographical research, to produce written reports and papers related to geographical themes and issues.
504. GEOGRAPHY OF ENVIRONMENTAL MANAGEMENT (5). Pr., 10 hours GY or COI. Increases understanding of the policies and methods designed to foster environmentally sustainable resource development.
505. INTERNATIONAL DEVELOPMENT (5). Pr., 10 hours of GY or COI. Interrelationships among people, cultures and the physical environment in the process of world development.
507. GLOBAL RESOURCES AND ENVIRONMENT (5). Pr., 10 hours GY or COI. A survey of global environmental issues and problems and review of the latest international mechanisms for improvement of world resource management.
510. PROBLEMS OF THE SOUTHEAST (5). Pr., 10 hours GY or COI. Significant spatial characteristics and relationships of the region's human and physical environment.
520. URBAN GEOGRAPHY (5). Pr., 10 hours GY or COI. City location, growth function and interrelationships among people and activities.
550. AGRICULTURAL GEOGRAPHY (5). Pr., 20 hours GY or COI. Geographical approaches to agriculture and influences of the physical environment and human factors on agricultural patterns.
580. GEOGRAPHIC INFORMATION SYSTEMS (5). Pr., 20 hours GY or COI. Provides students with no previous experience with an understanding of the basic concepts of computerized geographic information systems (GIS).
580. INTERPRETATION OF AERIAL PHOTOGRAPHY AND REMOTE SENSING IMAGERY (5). Pr., 20 hours GY or COI. Aerial photo and satellite digital image interpretation, remote sensing technology and photogrammetry.
599. INTERNSHIP (5). Pr., 20 hours GY or COI. Offers credit for geography students engaged in internships. Department permission required. S-U grading only.

## Geology (GL)

Professors Cook, Head, Carrington and Gastaldo

Associate Professors Chalokwu and King

Assistant Professors Lewis, Salpas, Savrda and Steltenpohl

105. GEOLOGY OF THE NATIONAL PARKS (3). LEC. 3. Fall. Examination and discussion of the geologic processes responsible for the unique characteristics of selected national parks based on their description as "Geologic features worthy of preservation and protection" by the U.S. Department of the Interior.
106. GEOLOGY OF OUR SOLAR SYSTEM (3). LEC. 3. Spring. Examination of our sun and its planets from the geologist's perspective by the use of recently acquired data from manned and unmanned sample-return missions, remote geochemical and geophysical experiments and remotely-sensed photogeology.
110. PHYSICAL GEOLOGY (5). LEC. 4, LAB. 2. All quarters. General physical geology. Survey of the important minerals and rocks with emphasis on the processes that affect their formation and destruction. Origin and classification of geologic structures. Not open to students having credit in GL 315.
111. HISTORICAL GEOLOGY (5). LEC. 4, LAB. 2. Pr., GL 110. All quarters. Physical and biological history of the Earth, with emphasis on the evolution of life forms.
205. PALEOBOTANY (5). LEC. 4, LAB. 2. Pr., BI 102, sophomore standing. Fall. Taphonomic processes responsible for the generation of plant-bearing lithologies, hydrocarbon accumulating systems, biostratigraphic assemblages, paleoecological restorations of the Phanerozoic and evolution of plant groups.
206. INVERTEBRATE PALEOZOOLOGY (5). LEC. 4, LAB. 2. Pr., BI 103, sophomore standing. Winter. Morphology, classification and significance of selected genera representative of the diversity of fossil invertebrates, including microscopic fossils.
215. GEOLOGICAL FIELD METHODS (6). LAB. 12. Pr., GL 240 and IE 102 or coreq. Summer. Instruments and methods used in geological field mapping. Final report required.
231. INDEPENDENT GEOLOGICAL MAPPING (2). LAB. 5. Pr., GL 215, sophomore standing. All quarters. Independent mapping project of limited extent done with the consent and under the direction of a faculty member. A geological map and report must be completed, summarizing the investigation of the area chosen.
240. STRUCTURAL AND GEOTECTONIC PRINCIPLES (5). LEC. 3, LAB. 4. Pr., GL 110 or 315. Spring. Principles and processes of rock deformation, including description and classification of rock structures and methods of analysis. General history of the development of North America through understanding of plate structural developments.
301. MINERALOGY (5). LEC. 4, LAB. 2. Pr., CH 103, junior standing. Fall. Introduction to crystal chemistry and crystallography. Systematic study of representatives of important metallic and non-metallic mineral groups.
302. OPTICAL MINERALOGY (5). LEC. 4, LAB. 2. Pr., GL 301, junior standing. Winter. Theory and application of polarized light optics as applied to mineral identification, with emphasis on rock-forming silicate minerals in thin sections.
305. IGNEOUS AND METAMORPHIC PETROLOGY (5). LEC. 4, LAB. 2. Pr., GL 302 and CH 105, junior standing. Spring. Principles and processes of intrusive and extrusive igneous activity and metamorphism. Description and classification of igneous and metamorphic rocks.
315. ENGINEERING GEOLOGY (4). LEC. 3, LAB. 2. Pr., junior standing. All quarters. Fundamental geological principles, materials and features that affect engineering projects and programs. Emphasis on pre-construction geological analysis in recognition of potential construction and post-construction hazards and problems. Not open to students having credit in GL 110.
401. SEDIMENTARY PETROLOGY (5). LEC. 4, LAB. 2. Pr., GL 302 and CH 105, junior standing. Fall. Detailed description and classification of sedimentary rocks, with emphasis on the processes of sediment transportation, deposition and diagenesis in marine and non-marine environments.
411. STRATIGRAPHY (5). LEC. 4, LAB. 2. Pr., GL 205, 206, 240 and 401, junior standing. Winter. Descriptive geology pertaining to the discrimination, character, thickness, sequence, age and correlation of rocks. Particular emphasis on field study of stratified rocks.
421. ECONOMIC GEOLOGY (5). LEC. 4, LAB. 2. Pr., GL 240, 305 and 401, junior standing. Spring. The origin, distribution and classification of mineral deposits formed by igneous, metamorphic and sedimentary (or secondary) processes. Introduction of methods of exploration and development.
431. RESEARCH METHODS AND APPLICATION (1-4). Pr., senior majoring in geology and/or consent of departmental faculty upon receipt of acceptable proposal. All quarters. Active participation in some phase of original research under supervision of a senior investigator. Credit evaluation determined by the departmental faculty on the basis of the formal presentation of the problem and the probable method(s) of investigation. May be taken more than one quarter for a maximum cumulative credit of four credit hours.
470. HONORS THESIS (3-6). Pr., enrollment in the University Honors Program. All quarters. May incorporate library, field or laboratory research in any proportion. Research project and credit-hour value shall be agreed upon by the student and directing faculty member prior to enrollment. Written thesis and thesis defense required. May be repeated once for a maximum of six hours credit.
480. DIRECTED STUDY (1-3). Pr., COI. All quarters. Directed studies in areas of geology not covered by an existing course or to supplement knowledge gained from an existing course. May incorporate literature and/or laboratory research in any proportion. The subject matter and credit hour value shall be agreed upon by the student and directing faculty member prior to enrollment. A written report is required. May be taken more than one quarter.

500. MICROCOMPUTER APPLICATIONS IN GEOLOGY (2). LEC. 2. Pr., COI. Introduction to the utilization of commercially available and public domain software pertinent to solving geological problems. Does not satisfy computer language requirement for B.S. or M.S. degree in geology.

The following courses are available during Summer Quarters at the Dauphin Island, Alabama, Sea Laboratory and at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi. Application forms must be obtained from the Department of Geology during final registration for the Winter Quarter preceding intended attendance.

#### COURSES AT DAUPHIN ISLAND SEA LABORATORY

120. MARINE TECHNICAL METHODS I (3). LAB. 8. Pr., COI. Summer only. Introduction to instruments and procedures utilized aboard marine research vessels, including physical, biological and geological measurements and sampling techniques.
121. MARINE TECHNICAL METHODS II (3). LAB. 8. Pr., COI. Summer only. Introduction to laboratory methods associated with chemical parameters of "nutrient analysis." Shipboard and practical skills developed.
202. INTRODUCTORY MARINE GEOLOGY (6). LEC. 4, LAB. AND FIELD 4. Pr., Physical Geology and COI. Summer only. Sedimentary environments, seafloor topography and history of ocean basins. Sampling and laboratory techniques and relationship of biota to sediment substrate.
501. RECENT MARINE SEDIMENTATION (6). LEC. 4, LAB. 4. Pr., GL 202 or ZY 201 or ZY 330 or COI. Summer only. Properties of marine sediments, coastal environments, continental margins, reefs and the deep sea. Monitoring and measuring of shoreline changes.
502. PROBLEMS IN MARINE PALEOECOLOGY (6). LEC. 4, LAB. 4. Pr., GL 110 and GL 206 or COI. September Preterm, alternate years. Survey of principal Mesozoic and Cenozoic marine fossil groups, their paleoecology and paleogeography.

#### COURSES AT GULF COAST RESEARCH LABORATORY

440. PHYSICAL MARINE GEOLOGY (5). LEC. 2, LAB. 5. Pr., consent of departmental advisor, junior standing. Summer only. General introduction to the physical processes resulting in the coastal morphology of Mississippi Sound, emphasizing erosional and depositional effects of waves and currents. Various environmental types (deltas, estuaries, etc.) and their characteristics are studied. Identification of ancient shorelines and ancient environments.
441. CHEMICAL MARINE GEOLOGY (5). LEC. 2, LAB. 5. Pr., consent of departmental advisor, junior standing. Summer only. Overview of the chemical systems in the oceans, with special emphasis on near-shore marine and estuarine environments. Basic analytical methods currently used to study the marine environment, with a strong concentration on instrumental methods of analyzing natural waters and sediments. Supervised research on chemical systems in the local estuaries, Mississippi Sound and offshore.

#### ADVANCED UNDERGRADUATE AND GRADUATE

505. PRINCIPLES OF ANALYTICAL GEOCHEMISTRY (3). LEC. 2, LAB. 2. Pr., GL 302 or COI. Fall. Basic principles of x-ray diffraction/fluorescence and atomic absorption spectrophotometry, neutron activation will be discussed. Emphasis will be on the utilization of these techniques in the analysis of geological materials.
540. PRINCIPLES OF EARTH SCIENCE (5). LEC. 3, LAB. 4. Summer only. A special course in earth science for in-service and future teachers only. The subject matter encompasses internal surficial geology, meteorology and oceanography. It stresses theory and applications and includes both indoor and field laboratories. Not open to undergraduates with credit in GL 101, 102 or 110. GL 540 is not a substitute for those courses.
550. SEDIMENTARY DEPOSITIONAL SYSTEMS (4). LEC. 3, LAB. 2. Pr., GL 401 and 411 or equivalents. Fall. Systematic study of the sedimentology and facies stratigraphy of modern and ancient depositional systems. Covers terrigenous-detrital and carbonate depositional environments. Emphasizes analysis of the current literature and field work.

#### Health Administration (HA)

(Department of Political Science)

Associate Professor Burns

Assistant Professor Ford

320. HEALTH POLICY (5). Pr., PO 209 or 210. The health policy system; political issues affecting health services.
360. INTRODUCTION TO HEALTH ADMINISTRATION (5). Pr., HA 320 or COI, plus CSE 100. Basic concepts and principles of administration of health services organizations.
361. LEGAL STRUCTURE OF HEALTH ADMINISTRATION (3). Pr., HA 360. Legal processes and aspects affecting the work of administrators of hospitals and other health services organizations.
370. HEALTH ADMINISTRATION AND COMMUNITY (3). Pr., HA 360, SY 220, PO 300. Use of epidemiological methods in analysis of community resources, resource allocation, program implementation and general health administration. Development of appropriate strategies for effective community relations by health administrators.
450. INTERNSHIP (10). Pr., HA 360, HSA or HSM major and junior standing. (S-U grading only). Practical administrative experience in health services organizations as arranged and approved by the HA Program.
451. INTERNSHIP READING COURSE (5). Coreq., concurrent enrollment in HA 450. Independent readings in administration of health services organizations as approved by instructor.



500. DEVELOPING HEALTH CARE ORGANIZATIONS (3). Pr., HA 360 or graduate standing and COI. Organizational strategies for effective interfacing of medical, nursing, allied health and administrative staff with patient needs.
510. FINANCE IN HEALTH ADMINISTRATION (3). Pr., HA 360 or graduate standing and COI. Reimbursement structures, regulatory mechanisms, cost control and related factors affecting administration of health services organizations.
530. HEALTH ADMINISTRATION AND REGULATION (3). Pr., HA 360 or graduate standing and COI. Government regulatory programs affecting administration of health services organizations.
531. HEALTH ADMINISTRATION AND TECHNOLOGY (3). Pr., Pr., HA 360 or graduate standing and COI. Effects of developments in modern technology on administration of health services organizations.
532. HEALTH ADMINISTRATION AND LONG-TERM CARE (3). Pr., HA 360 or graduate standing and COI. Political and administrative issues in administration of long-term care organizations.
539. TOPICS IN HEALTH ADMINISTRATION (1-5). Pr., Pr., HA 360 or graduate standing and COI. Analysis of specific problems in health administration. May be repeated for a maximum of 10 hours credit.
550. SPECIAL PROBLEMS IN HEALTH ADMINISTRATION (1-5). Pr., HA 360 or graduate standing and COI. Qualified students conduct systematic investigation of selected problems in administration of health services under supervision of instructor. May be repeated for a maximum of 10 hours credit.

### **Health and Human Performance (HHP)**

Professors Wilson, Head, Gladden, Moore, Puckett and Reeve  
Associate Professors Fischman, Ford, Blessing and Davenport  
Assistant Professors Crabtree, Daniels,  
Lander, Newkirk, Pascoe, Rosen, Waldrop and Washington  
Instructors Cairns, Diamond, Mathews and Ford III

The purpose of the Department of Health and Human Performance is for students to develop the basic and applied principles underlying optimal health, maximum physical performance, the appropriate use of leisure time and how to deliver this information in a school or non-school setting. More specifically, in response to societal needs and trends, the Department prepares students to become teachers of physical education (N-12) and non-school professionals in Health Promotion, Exercise Science and Recreation and Sports Management.

### **PHYSICAL EDUCATION – GENERAL PROGRAM (PE)**

**Physical Education Requirements:** Refer to School or program requirements.

**Credit.** All 100- and 200- level PE courses carry two hours credit per quarter and 300-level courses carry one hour credit. (Maximum of six quarter hours allowed on degree.) No student may receive credit for a course in which the person has previously earned credit.

Students may not register for a beginning level course after having earned credit in the sport or dance area on an advanced level. Credit cannot be earned for a 200- and a 300-level course in the same sport.

To audit, students must secure approval of department head or director of physical education general program.

### **PHYSICAL EDUCATION SERVICE COURSES (PE)**

101. PHYSICAL FITNESS: SELF APPRAISAL (2). Understanding of the relationship of human movement to body efficiency, aesthetics and health; self-appraisal; development of a personal plan for achieving and maintaining physical condition; selection of a personal program of developmental and recreational activities.
102. SWIMMING FOR THE NON-SWIMMER (2). Knowledge and skill in aquatics which are developed to a level sufficient to support a recreational interest and to assure one's own safety and the safety of others in and around water.
103. INDIVIDUALIZED AQUATICS (2). Provides water therapy, an understanding of adaptive movements and aquatic skills.
104. MOUNTAINEERING (2). Pr., signed Army form 131. Basic climbing techniques and rappelling. Class presentations covering ropes, knots, snap links and all associated equipment for climbers. Includes both discussion and practical exercises. Requires a weekend field training exercise with climbing and rappelling at Talladega National Forest.
105. PISTOL MARKSMANSHIP (2). Pr., signed Army form 131. Basic instruction and pistol firing exercises covering various shooting positions. Instruction is designed to expose the student to marksmanship as a challenging recreational sport.
107. SPORTS AND DANCE IN AMERICAN CULTURE (2). (ATYPICAL).
114. SPECIAL FITNESS RELATED TOPIC (2). Additional fee may be charged by cooperating agency.
115. ADAPTED PHYSICAL EDUCATION (2). Concerned with the improvement and correction of physiological and anatomical remedial defects.

116. WEIGHT CONTROL (2). Caloric intake-output, nutrition and the development of desirable exercise and nutritional habits. Activities selected according to individual needs and limitations. Open to students with health classifications. "A" and "B."
117. AEROBIC DANCE (2).
125. BASKETBALL (2).
127. SOCCER-SPEEDBALL (2).
130. JOGGING (2).
131. FENCING (2).
132. WRESTLING (2).
133. ORIENTEERING (2). Pr., signed Army form 131. Instruction and practical application in land navigation and orienteering to include types of maps, use of lensatic and Silva compasses, determination of scale, distance, elevation and relief, map and ground orientation, field expedients for navigation and a working knowledge of the different types of orienteering events. Includes five hours of practical field work.
134. JUDO (2).
135. WEIGHT TRAINING (2).
136. TRACK (2).
137. HANDBALL (2).
138. RACQUETBALL (2).
139. WILDERNESS SKILLS (2). Pr., signed Army form 131. A personal confidence building course that provides an introduction to basic survival skills to include rappelling, food procurement and preparation, traps and snares, climbing techniques, hasty shelters, emergency first aid and field expedient techniques. Requires one weekend field trip to the Talladega National Forest.
140. GYMNASTICS (2). Understanding of gymnastics and skill in the use of different apparatus.
141. TRAMPOLINE (2).
142. TUMBLING (2).
144. MODERN DANCE (2). An understanding of dance as an art form.
145. MODERN DANCE II (2). Pr., PE 144 or equivalent.
146. TAP DANCE (2).
147. BALLET (2). Fundamentals and terminology of classical ballet.
148. BALLET II (2). Pr., PE 147 or equivalent.
149. JAZZ DANCE (2). Pr., COI.
150. INTERMEDIATE SWIMMING (2). Pr., COI.
151. SPECIAL RECREATIONAL TOPIC (2). Additional fee may be charged by cooperating agency.
152. SWIMMING FOR FITNESS (2). Pr., PE 150 or equivalent. Physical conditioning through water exercises and swimming.
153. SPRINGBOARD DIVING (2). Pr., COI. Instruction in the basic dives; front, back, inward, reverse and twist.
154. RECREATIONAL SPORTS AND ACTIVITIES (2). Survey of selected recreational pursuits such as billiards, croquet, darts, gym bowling, hiking, horseshoes, net games and shuffleboard.
155. ANGLING (2). Skills in bait and fly casting. Selection and care of tackle.
156. ARCHERY (2).
157. BADMINTON (2).
158. BOWLING (2). Additional fee payable to cooperating agency.
159. GOLF (2). Additional fee payable to cooperating agency.
162. RIFLE MARKSMANSHIP (2). Pr., signed Army form 131.
163. TENNIS (2).
165. CAMPING (2). Understanding of American heritage in relation to the out-of-doors, camping trends, conservation and the development of camping skills.
166. FAMILY RECREATION (2). Leisure time activities suitable for the family.
168. BASIC EQUITATION (2). Additional fee payable to cooperating agency.
170. FOLK DANCE (2).
172. SOCIAL DANCE (2). Mixers, as well as ballroom dances: foxtrot, waltz, rumba, tango and other representative Latin dances.
180. SOFTBALL (2).
181. VOLLEYBALL (2).
201. ADVANCED SURVIVAL AND MOUNTAINEERING (2). Pr., signed Army form 131, Pr., PE 139 or PE 104 or equivalent. Topics include emergency first aid, food procurement and preparation, advanced rappelling and climbing, shelters, water sources and field expedient techniques. Course requires a weekend field training exercise in the Talladega National Forest.
230. LIFE SAVING (2). Pr., ARC Standard First Aid or equivalent certifications. Development of skills leading to certification in American Red Cross Lifeguard Training.

- 231. SKIN DIVING (2). Pr., COI. Underwater swimming includes selection and use of swim fins, mask, snorkel. Underwater physiology and safety are emphasized.
- 234. JUDO II (2). Pr., PE 134 or equivalent.
- 235. WEIGHT TRAINING II (2). Pr., PE 135 or equivalent.
- 238. RACQUETBALL II (2). Pr., PE 138 or equivalent.
- 250. SYNCHRONIZED SWIMMING (2). Pr., COI.
- 259. GOLF II (2). Pr., PE 159 or equivalent. Additional fee payable to cooperating agency.
- 283. TENNIS II (2). Pr., PE 163 or equivalent.

### VARSITY (PE)

- 325. VARSITY BASKETBALL (1).
- 326. VARSITY FOOTBALL (1).
- 332. VARSITY WRESTLING (1).
- 336. VARSITY TRACK (1).
- 337. VARSITY CROSS COUNTRY (1).
- 340. VARSITY GYMNASTICS (1).
- 350. VARSITY SWIMMING (1).
- 359. VARSITY GOLF (1).
- 362. VARSITY RIFLERY (1). Pr., signed Army form 131.
- 363. VARSITY TENNIS (1).
- 379. VARSITY SOFTBALL (1).
- 380. VARSITY BASEBALL (1).
- 381. VARSITY VOLLEYBALL (1).

### HEALTH AND HUMAN PERFORMANCE (HHP)

- 100. FUNDAMENTALS OF MOVEMENT (1). Framework for human movement that allows for effective delivery of motor skills instruction by the physical education teacher.
- 102. ORIENTATION FOR TRANSFER STUDENTS (1).
- 118. SKILLS AND CONCEPTS OF INDIVIDUAL AND DUAL ACTIVITIES I (3). LAB. 6. Track and Field, archery, golf, wrestling and other individual and dual activities.
- 119. SKILLS AND CONCEPTS OF INDIVIDUAL AND DUAL ACTIVITIES II (3). LAB. 6. Tennis, badminton, racquetball, squash and handball.
- 120. SKILLS AND CONCEPTS OF GYMNASTICS (3). LAB. 6. Tumbling, trampoline and apparatus.
- 121. SKILLS AND CONCEPTS OF AQUATICS (2). LAB. 4. Strokes, survival swimming techniques, competitive swimming, springboard diving and other aquatic activities.
- 122. SKILLS AND CONCEPTS OF TEAM SPORTS I (3). LAB. 6. Basketball, volleyball and other indoor team sports.
- 123. SKILLS AND CONCEPTS OF DANCE (3). LAB. 6. Contemporary, folk, square, tap and ethnic dance.
- 124. SKILLS AND CONCEPTS OF TEAM SPORTS II (2). LAB. 4. Soccer, speedball, field hockey and related outdoor team sports.
- 185. HEALTH SCIENCE (2). Basic understanding concerning sound health practices and protection. Physical, mental and social aspects of personal and community health are considered.
- 200. THEORY AND CONDUCT OF PHYSICAL ACTIVITIES (5). LEC. 3, LAB. 4. Includes how to organize and administer individual and dual sports, team sports, gymnastics and dance at both education and competitive levels.
- 201. HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION (3).
- 202. BASKETBALL (3). LEC. 2, LAB. 2. Fundamental skill techniques of basketball — offense, defense and strategy.
- 203. BASEBALL (3). LEC. 2, LAB. 2. Offensive and defensive strategy, pitching, catching, infielding, outfielding, batting and baserunning.
- 204. TRACK AND FIELD (3). LEC. 2, LAB. 2. Fundamental skills and techniques of track and field athletics. The organizing and conducting of track meets.
- 206. FOOTBALL (3). LEC. 2, LAB. 2. Fundamentals of football and the different types of offense, defensive team strategy and generalship.
- 211. MOTOR DEVELOPMENT (3). LEC. 2, LAB. 2. Designed to develop understandings and skills concerning the broad concept of motor development of children, ages 4-8.
- 213. DANCE FOR CHILDREN (3). LEC. 2, LAB. 2. Includes all forms of dance suitable for elementary school age children with emphasis on creative dance activities which afford a progression in dance skills.
- 228. SPORTS OFFICIATING (3). LEC. 2, LAB. 2. Basic officiating principles applicable to all sports with lab experiences and study of rules for selected sports.
- 280. FOUNDATIONS OF HEALTH EDUCATION (3). Basic theories and concepts associated with health education in all settings and health educators as change agents.
- 282. INTRODUCTION TO LEISURE SERVICES (3). History, philosophy, economic impact and scope of leisure service organizations in our society.

295. SCHOOL HEALTH (3).
296. COMMUNITY HEALTH (3).
315. KINESIOLOGY (4). LEC. 3, LAB. 2. Pr., ZY 250.
335. EXERCISE AND SPORT PSYCHOLOGY (4). Pr., PG 211. Examination of the role of psychological factors, including motivation, anxiety and personality in sport and physical activity.
351. WATER SAFETY INSTRUCTOR TRAINING (3). LEC. 1, LAB. 4. Pr., PE 230 or equivalent certification. Development of skills and teaching abilities leading to certification as an American Red Cross Water Safety Instructor.
352. LIFEGUARD INSTRUCTOR TRAINING (3). LEC. 2, LAB. 2. Pr., PE 230 or equivalent certification. Development of skills and teaching abilities leading to certification as an American Red Cross Lifeguard Training Instructor.
370. DANCE SURVEY (3). LEC. 2, LAB. 2. Comprehensive study of dance from primitive man to current styles of dance.
372. DANCE PRODUCTION (3). LEC. 2, LAB. 2. Apprenticeship in producing dance programs, exhibitions of physical activity and festivals.
373. DANCE THEATRE (1-8). Pr., COI. Participation in rehearsal lecture demonstrations, concert work and other presentations related to dance.
384. PARK AND RECREATION MAINTENANCE (3). Basic maintenance principles applicable to park and recreation agencies.
386. LEADERSHIP IN LEISURE SERVICES (3). Pr., HHP 282. Theories, techniques and leadership procedures applied to leisure service settings.
387. OUTDOOR RECREATION (3). Those recreational activities which occur in an outdoor environment and which relate directly to that environment.
388. CAMP MANAGEMENT (3). Introduction to the principles and applications of organized camping.
389. RECREATION INTERPRETATIVE SERVICES (3). Pr., HHP 282. Principles and techniques used to communicate natural, historical and cultural features of an outdoor recreation area to park visitors. Develops the ability to gather information, create and present an interpretative program.
392. CONSUMER HEALTH (3). Pr., HHP 195. Basic principles and concepts associated with the selection and use of health products, services and health information.
394. METHODS OF HEALTH INSTRUCTION (3). LEC. 2, LAB. 2.
396. DRUG USE AND ABUSE (3). Investigation of stimulants, depressants, alcohol, narcotics and tobacco. The effects of these substances on the human body and the social, economic and community problems associated with their use.
400. PROGRAMMING IN LEISURE SERVICES (5). Pr., HHP 386. Program planning procedures, techniques and related administrative functions for leisure service agencies.
404. ATHLETIC INJURIES (3).
405. PHYSIOLOGY OF EXERCISE (4). LEC. 3, LAB. 2. Pr., ZY 251. Principles of physiology with special emphasis on the application of physiological findings to practical problems related to human physical activity.
413. TEACHING PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (3). LEC. 2, LAB. 2. Pr., admission to teacher education for certification program.
414. TEACHING PHYSICAL EDUCATION IN SECONDARY SCHOOLS (3). LEC. 3, LAB. 2. Pr., admission to teacher education for certification program.
416. ADAPTIVE PHYSICAL EDUCATION (3). LEC. 2, LAB. 2. Pr., ZY 250, RSE 376 or COI. Review of anatomy, physiology and psychology pertaining to special programs of physical education for the temporarily and permanently handicapped, with laboratory practice in posture training and remedial gymnastics.
423. PROGRAM IN PHYSICAL EDUCATION (5). Pr., admission to Teacher Education for certification program.
424. ORGANIZATION OF INTRAMURAL SPORTS PROGRAMS (3). LEC. 2, LAB. 2.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, professional screening, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods designed to provide positive evaluation and analysis of the intern experience.
426. EVALUATION AND MEASUREMENT IN PHYSICAL EDUCATION (3). LEC. 2, LAB. 2. Pr., FED 400.
429. MOTOR LEARNING AND PERFORMANCE (4). LEC. 3, LAB. 2. Pr., PG 211. Process of motor skill acquisitions; emphasis on variables that influence motor learning and performance.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations normally in small groups.
475. HEALTH PROMOTION IN THE WORKPLACE (3). Pr., HHP 195, 280. Principles basic to the promotion of health within businesses and corporations. Includes development and evaluation of worksite programs such as stress management, smoking cessation, weight control, physical fitness, etc.
485. SOCIAL RECREATION (3). The organizing, planning and implementing of social oriented activities in park and recreation settings.
486. PARK PLANNING (3). Pr., HHP 282. Basic design principles as related to recreation and park planning. Consideration is given to design problems and solutions in park maintenance, vandalism, visitor control and other problems of recreation resource management.

## History

487. PARK MANAGEMENT (3). Pr., HHP 282. An investigation into the operation of parks and resource areas with emphasis on the managerial function of the park administrative personnel.
494. EMERGENCY CARE AND FIRST AID (3). LEC. 2, LAB. 2. Prevention of injuries and emergency care of illnesses and injuries. Includes cardiopulmonary resuscitation (CPR).
495. PRACTICUM (1-10). Provides experiences closely relating theory and practice, usually carried on simultaneously.

### ADVANCED UNDERGRADUATE AND GRADUATE

505. PRINCIPLES OF ADULT FITNESS (4). LEC. 2, LAB. 2. Pr., HHP 405 or COI. Introduction to the basic principles of exercise testing, exercise prescription, and supervision of programs for adult populations.
510. ADVANCED ATHLETIC TRAINING (5). LEC. 4, LAB. 2. Pr., HHP 404 or COI. Prevention of injuries and advanced techniques of athletic training, including therapeutic modalities and injury rehabilitation.
517. PHYSICAL EDUCATION FOR THE MENTALLY RETARDED (3). LEC. 2, LAB. 2. Pr., HHP 211 or 212. The motor characteristics of the mentally retarded and the design of special programs of physical education; involves working with mentally retarded children.
520. SOCIOLOGY OF SPORT (5). Sport and culture. Attention is given to social processes and human behavior in sport situations.
527. DANCE CONCEPTS AND RELATED CLASSROOM EXPERIENCES (5).
570. STRENGTH POWER TRAINING: THEORY AND PRACTICE (5). Pr., HHP 315, 405. Theoretical and practical concepts related to strength training and the role of the strength coach.
594. EMERGENCY CARE INSTRUCTOR TRAINING (3). LEC. 2, LAB. 2. Pr., HHP 494 or equivalent certification. Advanced emergency care techniques and American Red Cross Instructor certification in basic life support courses.

## History (HY)

Professors Bond, Head, Campbell, Conniff, Fabel, Flynt, Harrell, Lewis,  
McDonough, Owsley and Rea

Associate Professors Beckwith, Bohanan, Cronenberg, Gerber, Hansen, Hall,  
Henson, Kicklighter, McFarland, Melancon, Olliff, Szecchi and Trimble

Assistant Professors Biggs, Coryell, Crocker and Essah

101. WORLD HISTORY I (3). A survey of world civilization from prehistory to 1400.
102. WORLD HISTORY II (3). A survey of world civilization from 1400-1815.
103. WORLD HISTORY III (3). A survey of world history from 1815 to the present.
121. TECHNOLOGY AND CIVILIZATION I (3). The interaction of technology and of human culture from prehistoric times to the industrial revolution.
122. TECHNOLOGY AND CIVILIZATION II (3). The interaction of technology and of human culture from the industrial revolution to the end of the 19th century.
123. TECHNOLOGY AND CIVILIZATION III (3). The interaction of technology and other aspects of human culture in the 20th century.
171. HONORS PROGRAM I. ANCIENT AND MEDIEVAL HISTORY (3). Pr., admission to Honors Program.
172. HONORS PROGRAM II. EARLY MODERN HISTORY (3). Pr., admission to Honors Program.
173. HONORS PROGRAM III. MODERN HISTORY (3). Pr., admission to Honors Program.
191. HONORS TECHNOLOGY AND CIVILIZATION I (3). Pr., admission to Honors Program. Interaction of technology and human culture from historic times to the industrial revolution for selected honors students from scientific and engineering disciplines.
192. HONORS TECHNOLOGY AND CIVILIZATION II (3). Pr., admission to Honors Program. Interaction of technology and human culture from industrial revolution to the end of the 19th century for selected honors students from scientific and engineering disciplines.
193. HONORS TECHNOLOGY AND CIVILIZATION III (3). Pr., admission to Honors Program. Interaction of technology and culture in 20th century for selected honors students from scientific and engineering disciplines.
201. A HISTORY OF THE UNITED STATES TO 1865 (5).
202. A HISTORY OF THE UNITED STATES SINCE 1865 (5).
207. EUROPEAN HISTORY, 1500-1815 (5). A survey of early modern Europe through the French Revolution.
208. EUROPEAN HISTORY SINCE 1815 (5). A survey of Europe since the French Revolution.
300. CONTEMPORARY CENTRAL AMERICAN HISTORY (3). Pr., sophomore standing. An analysis of the nature and origins of problems facing contemporary Central America.
301. INTRODUCTION TO FAR EASTERN HISTORY (5). Pr., sophomore standing. The major cultural and institutional developments of the area.
306. CONTEMPORARY HISTORY (3). Recent events and their effect on the modern world.
307. HISTORY OF U.S. AIR POWER (3). Traces evolution of U.S. military aviation policy.
308. NAVAL HISTORY OF THE UNITED STATES (3). The United States Navy from the American Revolution to the present including the evolution of naval technology and strategy and the role of the navy in defense, discovery and diplomacy.



309. MILITARY HISTORY OF THE UNITED STATES (3). History of the United States military policy, strategy and tactics, 1775 to the present (land warfare).
310. GRECO-ROMAN HISTORY (5). Pr., sophomore standing. The Classical or Hellenic Civilization from the Homeric Age to the reign of the Emperor Justinian.
311. MEDIEVAL HISTORY (5). Pr., sophomore standing. Europe from the fall of the Roman Empire to the Age of Discovery.
315. HISTORY OF AFRO-AMERICANS IN U.S. TO 1865 (3). Pr., sophomore standing. Survey of black history in America.
316. HISTORY OF AFRO-AMERICANS SINCE 1865 (3). Pr., sophomore standing.
317. AMERICAN FOLK/ORAL HISTORY (3). A cultural survey of the "common people," utilizing oral history.
318. UNITED STATES SOCIAL HISTORY (5). Pr., sophomore standing. A survey of the history of American society, focusing on such issues as family life, the nature of work and the impact of immigration.
319. UNITED STATES INTELLECTUAL HISTORY (5). Pr., sophomore standing. A survey of the history of American thought.
321. U.S. LEGAL AND CONSTITUTIONAL HISTORY (3). Describes changes in U.S. Constitution and legal system.
325. THE HISTORY OF WOMEN IN THE UNITED STATES TO 1870 (3). American women, Indian, Black and White from colonial settlement through the Civil War.
326. THE HISTORY OF WOMEN IN THE UNITED STATES SINCE 1870 (3). Political and economic roles of women from 1870 to the present.
330. HISTORY OF IRELAND (3). Pr., sophomore standing. Survey of Irish history.
337. GERMAN HISTORY (5). Survey of German history since the Reformation.
350. HISTORY OF POLITICAL PARTIES (5). Pr., sophomore standing. Origin and growth of American political parties from the Federalist era to the present.
354. HISTORY OF THE MIDDLE EAST (3). Surveys history and culture of region.
355. HISTORY OF THE IBERIAN PENINSULA (5). Spanish and Portuguese history, prehistoric to contemporary.
356. MODERN FRANCE (5). From the Ancien Régime to the present.
359. WORLD WAR II (3). Discusses origins and military campaigns of W.W. II.
375. TECHNOLOGY AND SOCIETY IN AMERICA 1876-PRESENT (3). Pr., sophomore standing. The interrelationship between technology and society.
378. HISTORY OF SPACE TRAVEL (3). Pr., sophomore standing. Study of space exploration.
379. SCIENTIFIC REVOLUTIONS (3). Pr., junior standing. Scientific revolutions since the Renaissance studied in their social and intellectual context.
380. SCIENCE FICTION AS INTELLECTUAL HISTORY (5). Pr., junior standing. The interaction between science, technology and other aspects of human culture as dramatized in classic works of science fiction.
381. HISTORY OF ALABAMA (5). Pr., sophomore standing. A brief history of Alabama from the beginning to the present.
390. SPECIAL TOPICS IN HISTORY (3). Pr., junior standing. Topics vary. May be taken twice on different topics.
399. HISTORY INTERNSHIP (5). Pr., junior standing. Inservice program with a professional agency.
405. HISTORICAL RESEARCH AND WRITING I (3). Pr., junior history majors. An introduction to the historical research methods.
406. HISTORICAL RESEARCH AND WRITING II (3). Pr., HY 405. Writing a research paper.
471. HONORS READING COURSE (3-5). Pr., admission to University Honors Program. Readings in special topics.
473. HONORS RESEARCH AND THESIS (1-3). Pr., admission to University Honors Program. Research in specialized topics.

#### ADVANCED UNDERGRADUATE AND GRADUATE

500. AMERICAN COLONIAL HISTORY (5). The political, economic, and social history of the colonies from their founding to the end of the French and Indian War, 1763.
501. THE AMERICAN REVOLUTION AND THE CONFEDERATION, 1763-1789 (5). The new British Colonial policy, the War for Independence, and the first federal constitution and the movement to replace it.
502. FEDERALIST AND JEFFERSONIAN AMERICA, 1789-1815 (5). The establishment of the new federal government, the origins of American political parties, and the role of the United States in the French Revolutionary and Napoleonic Wars.
503. THE AMERICAN SYSTEM AND JACKSONIAN DEMOCRACY, 1815-1850 (5). Nationalism, sectionalism, egalitarianism, and expansion.
504. THE CIVIL WAR (5). The sectional controversy from the Compromise of 1850 to the beginning of hostilities in 1861, and the military, economic, social, and political aspects of the war.
506. UNITED STATES HISTORY, 1865-1900 (5). United States history from the end of the Civil War to the beginning of the Progressive era.
507. UNITED STATES HISTORY, 1900-1945 (5). United States history from the beginning of the Progressive era to the end of World War II.
508. UNITED STATES HISTORY, 1945-PRESENT (5). United States history from the end of World War II to the present.

509. 19TH-CENTURY U.S. DIPLOMACY (5). U.S. relations with foreign powers to 1919.
510. 20TH-CENTURY U.S. DIPLOMACY (5). Emergence of America as a world power since 1919.
513. THE SOUTH TO 1865 (5). The origins and growth of distinctive social, economic, cultural, and ideological patterns in the South with emphasis on period 1815-1860.
514. THE SOUTH SINCE 1865 (5). Major trends in the South since the Civil War with emphasis on social, economic, cultural and ideological development.
516. SOCIAL AND INTELLECTUAL HISTORY OF MODERN EUROPE (5). Selected topics in social and intellectual history which have shaped modern European cultures.
526. THE RENAISSANCE AND REFORMATION, 1400-1600 (5). Europe during the Renaissance and Reformation.
527. 17TH-CENTURY EUROPE (5). Emphasis on the Thirty Years' War, Scientific Revolution, overseas colonization and European political developments in the age of Louis XIV.
528. EUROPE, 1715-1789 (5). A history of Europe from the Age of Absolutism to the collapse of the Old Regime.
529. THE FRENCH REVOLUTION AND NAPOLEONIC EUROPE, 1789-1815 (5). Causes and course of the Revolution in France, the Consulate, and the Empire and French hegemony in Europe.
531. EUROPE, 1815-1890 (5). European history from the Congress of Vienna to the age of nationalism and imperialism.
532. EUROPE, 1890-1945 (5). Europe in the age of world wars, the Great Depression, and totalitarianism.
533. EUROPE, 1945-PRESENT (5). The history of Europe since World War II, emphasizing the Cold War and contemporary political, economic, and social conditions.
550. EASTERN ASIA (5). A history of China and Japan in the modern world.
551. BRAZIL, 1800-PRESENT (5). National period.
552. CENTRAL AMERICA AND THE CARIBBEAN (5). An analysis of cultural developments in Central America and the Caribbean areas in the 19th and 20th centuries.
553. SOUTH AMERICA TO 1800 (5). The colonial and early national period.
554. HISTORY OF MEXICO (5). An analysis of the unique cultural development of Mexico.
555. SPANISH SOUTH AMERICA, 1800-PRESENT (5). A analysis of cultural developments in South America in the 19th and 20th centuries.
556. HISTORY OF RUSSIA, 800-1861 (5). Describes the birth and development of Russian culture, society, and politics up to the emancipation of the serfs.
557. HISTORY OF RUSSIA/USSR SINCE 1861 (5). Examines Russia/Soviet Union through reform, revolution, and development of a new society to the present day.
571. MEDIEVAL ENGLAND (5). Britain from earliest times to the Reformation.
572. THE MAKING OF GREAT BRITAIN (5). Britain from Reformation to American Revolution, 1485-1783.
573. MODERN BRITAIN (5). Britain from American Revolution to present, 1783-1990.
578. TECHNOLOGY AND SOCIETY IN PRE-INDUSTRIAL TIMES (5). The interplay between technology and human culture during selected periods of pre-industrial history.
579. TECHNOLOGY AND SOCIETY IN THE INDUSTRIAL REVOLUTION (5). Various approaches to the study of the interaction between technology, industry, and society in the United States and other countries during selected periods, normally in the late 18th and 19th centuries.
580. THE HISTORY OF FLIGHT (5). Stages in the development of human flight, including both aeronautics and space exploration, with interpretative analysis.

### **Horticulture (HF)**

Professors Shumack, *Head*, Chambliss, Dozier, Gilliam, Norton,  
Ponder, Powell, Sanderson and Ward

Associate Professors Brown, Goff, Himelrick, Keever, Kovach and Tilt  
Assistant Professors Behr, Dangler, Deneke, Eakes, Woods and Williams  
Adjunct Instructors C. Brown and Sistrunk

101. INTRODUCTION TO HORTICULTURE (3). LEC. 2, LEC-DEM. 2. Fall. Practical and scientific principles of horticulture. Primarily for new students majoring in horticulture and non-majors who want a general knowledge of the subject. General techniques of ornamental, fruit and vegetable gardening, and career opportunities in horticulture will be discussed.
201. ORCHARD MANAGEMENT (5). LEC. 3, LAB. 4. Fall and Spring. Propagating, planting, pruning, cultivating, fertilizing, spraying, thinning, harvesting, grading, storing and marketing the most valuable fruits and vegetables grown in the South.
202. FRUIT AND VEGETABLE PRODUCTION (5). LEC. 3, LAB. 4. Fall. Adaptation of and cultural practices for fruit and vegetable crops for production in Alabama. Degree credit may not be earned in both HF 202 and 201 or 206.
221. LANDSCAPE GARDENING (5). LEC. 3, DEM. 4. Pr., BI 102. Principles of landscape gardening applied to the development of small home grounds and school grounds. The lecture-demonstration periods are devoted to the identification and use of ornamental plants, landscape drawings, and the propagation and maintenance of ornamental plants.
222. ARBORICULTURE (5). LEC. 3, LAB. 4. Pr., HF 221 or COL. Identification, culture and use of ornamental trees in landscape plantings.

223. EVERGREEN SHRUBS AND VINES (5). LEC. 3, LAB. 4. Pr., HF 221 or COI. Identification, culture, and use of broadleaf and narrowleaf evergreens in landscape plantings.
224. PLANT PROPAGATION (5). LEC. 3, LAB. 4. Pr., BI 102. Basic principles and practices involved in the propagation of horticulture plants.
225. FLOWER ARRANGING (3). LEC. 2, LAB. 2. General elective. Principles and practices of flower arranging for the home. Fee of \$50 for supplies.
226. LANDSCAPE GRAPHICS (3). LEC. 2, LAB. 3. The development of drawing and drafting skills used to evolve and communicate schematic and detail landscape design concepts.
308. VEGETABLE CROPS (5). LEC. 3, LAB. 4. Spring, Summer. Principles and special practices in production of vegetable crops.
321. DECIDUOUS SHRUBS AND VINES (5). LEC. 3, LAB. 4. Pr., HF 221 or COI. Identification, culture and use of deciduous shrubs and small trees in landscape plantings.
323. GREENHOUSE ENVIRONMENT CONTROL (5). LEC. 4, LAB. 3. Pr., BI 102, HF 224. Principles and practices of construction and utilizing greenhouses for various purposes such as plant propagation, crop production, and research.
324. ELEMENTS AND PRINCIPLES OF LANDSCAPE DESIGN (5). LEC. 3, LAB. 4. Pr., HF 221 and at least five hours from the plant materials courses to be taken previously or concurrently, or COI. The art elements and design principles as they relate to Landscape Design. The organization of outdoor spaces leading to the evolution of Landscape Designs emphasized.
328. LANDSCAPE CONSTRUCTION (5). LEC. 2, LAB. 6. Pr., HF 226, 324 or COI. Investigation of the principles and practices used in the detail design and implementation of a landscape site plan or landscape planting plan. Topics to be covered: drafting, surveying, properties of construction materials, earthwork, drainage, and specifications.
330. HORTICULTURE INTERNSHIP (5). May be taken more than once for a total of 15 hours. Pr., COI, S-U, graded. To provide the student with practical on the job training under supervision in selected commercial establishments to include wholesale and retail nurseries, greenhouses, garden centers, landscape and landscape maintenance firms, and fruit and vegetable horticultural production units. Each term of employment will be for one quarter.
340. INDUSTRIAL FOOD PRESERVATION TECHNOLOGY (5). LEC. 3, LAB. 4. Pr., COI or junior standing. Fall, odd years. Principles of food preservation as applied to industry. Processes considered include refrigeration, pasteurization, canning, freezing, drying concentration, fermentation, pickling, salting, irradiation and the use of food additives.
390. UNDERGRADUATE SEMINAR (1). LEC. 1. Pr., junior standing. S-U graded. Develops an understanding of current developments and career opportunities in horticulture.
410. HERBACEOUS ORNAMENTAL PLANTS (5). LEC. 3, LAB. 4. Spring. Pr., HF 221 or COI. Identification, culture, and use of herbaceous annuals and perennials, bulbs, herbs, and ornamental grasses. Consideration of flower bed and border preparation, care and maintenance.
412. INTERIOR PLANTSCAPING (3). LEC. 2, LEC.-DEM. 2. Fall. Pr., HF 221 or COI. An introduction to the selection, installation, and care of tropical foliage plants in public interior settings. Topics will include: natural and artificial light, plant acclimatization, growing media, fertilizers, containers and pest control. About 50 plants common in interior plantings will be identified and their uses and limitations discussed.
415. RETAIL GARDEN CENTER MANAGEMENT (5). LEC. 4, LAB. 2. Pr., HF 222, 223, and 321 or COI. The following objectives will be covered: financing, selecting a location, designing a center, stocking, selling, personnel management, advertising and maintaining plants on the lot.
425. FLOWER SHOP MANAGEMENT (5). LEC. 4, LAB. 3. Pr., HF 225, 522, MN 241, ACF 211, COI. Winter, odd years. Principles and practices in the establishment and management of a retail flower shop. Store location, financing, buying, floral design, pricing, and merchandise control.
426. MINOR PROBLEMS (3-5). May be taken more than once for a total of 15 hours. Pr., COI. Selected problems in either vegetable production, pomology, food technology, or landscape and ornamental horticulture, on which independent library, field, laboratory, or greenhouse investigations are made, under supervision of instructors.
427. INTERMEDIATE LANDSCAPE DESIGN (5). LEC. 2, LAB. 6. Pr., HF 324 or COI. Man, nature, art and technology and their influence on landscape design.
428. ADVANCED LANDSCAPE DESIGN (5). LEC. 2, LAB. 6. Pr., HF 328, 427, and at least 10 hours from the plant materials courses to be taken previously or concurrently, or COI. Continuation of HF 427.
429. FOOD SCIENCE SEMINAR (1). Pr., senior standing. Winter. Lectures, discussions and literature reviews by staff, students and guest lecturers.

#### ADVANCED UNDERGRADUATE AND GRADUATE

501. COMMERCIAL VEGETABLE CROPS (5). LEC. 3, LAB. 4. Pr., HF 308. Fall, even years. Advanced course in production, storing, packaging and marketing of the major commercial vegetable crops.
504. FRUIT GROWING (5). LEC. 3, LAB. 4. Pr., BI 102, HF 201, CH 207. Summer, odd years. Production and marketing of commercial tree fruits grown in the South.
505. SMALL FRUITS (5). LEC. 3, LAB. 4. Pr., BI 102. Spring, even years. Principles and practices involved in the production of strawberries, grapes, blueberries, and brambles.
506. PECAN CULTURE (5). LEC. 3, LAB. 4. Pr., BI 102, CH 207, HF 201. Spring, odd years. Production and marketing of pecans, walnuts and chestnuts.
521. LANDSCAPE BIDDING, ESTABLISHMENT AND MAINTENANCE (5). LEC. 3, LAB. 4. Pr., BY 306, PLP 309. Winter. Principles and practices of the care and maintenance of trees and shrubs, including pruning, tree surgery, transplanting, and fertilization.

## Industrial Design

522. FLORICULTURAL CROP PRODUCTION (5). LEC. 4, LAB. 3. Pr., AY 304, BY 306, PLP 308. HF 323. ENT 502 or COL. Spring, even years. Floricultural crop production under management in greenhouse and outdoor conditions.
523. NURSERY MANAGEMENT (5). LEC. 3, LAB. 4. Pr., HF 224, BY 306, AY 304. Winter. Principles and practices of the management of a commercial ornamental nursery.
531. ADVANCED LANDSCAPE GARDENING (4). LEC. 3, LAB. 4. Pr., BI 101, HF 221, graduate standing. Principles and practices applying to the use of ornamental plant material in landscaping.
532. CONTROLLED PLANT GROWTH (5). LEC. 3, LAB. 4. Pr., AY 304, BY 306, CH 208, HF 323, junior standing. Controlling and directing growth of plants by manipulation of the environment and by the use of chemicals.
535. ADVANCED CARE AND MAINTENANCE OF ORNAMENTAL PLANTS (5). Pr., HF 521. This course will include visits to nurseries, landscape construction firms, and landscape maintenance firms. Visits will also be made to installation and maintenance sites. There will be on site participation in all phases of landscape installation and maintenance including extensive experiences in problem diagnosis.
543. FOOD CHEMISTRY (5). LEC. 3, LAB. 4. Pr., CH 207 or 203. Winter. Chemistry of the important components of foods and changes occurring during processing, storage, and handling.
545. FOOD ANALYSIS AND QUALITY CONTROL (5). LEC. 3, LAB. 4. Pr., HF 543. Spring, even years. Sensory, chemical, and instrumental food analysis and its application to quality control and evaluation of grades and standards.
593. PRACTICUM (1-5). May be repeated not to exceed 10 hours credit. Not open to majors in Horticulture. Provides students with experience in horticulture closely relating theory and practice, usually carried on simultaneously.

### Industrial Design (IND)

Professors Lundell, *Head*, and Schaefer

Associate Professors Lau and Smith

Assistant Professor Karcz

Visiting Assistant Professor Wingard

110. DRAWING SYSTEMS (5). Pr., acceptance into IND curriculum. Visual exploration, analysis and communication of mechanical design principles.
111. PERSPECTIVE DRAWING (5). Pr., IND 110. Introduction to drawing systems utilized in product design and fabrication.
112. DRAWING FOR DESIGN AND PROD. (5). Pr., IND 111. Advanced product design communication with emphasis on the production processes.
200. RESEARCH PROTOTYPE FABRICATION (1). Pr., PIND standing. Instruction in the fabrication of three-dimensional prototype models utilizing various materials.
210. PRIN. OF IND I (5). LEC. 2, STUDIO 8. Visual communication. Perception theory, design fundamentals; color, figure organization, movement and balance, proportion and rhythm.
211. PRIN. OF IND II (5). LEC. 2, STUDIO 8. Pr., IND 210 and COL. An extension of principles encountered in Industrial Design 210. A study and analysis of industrial design fundamentals.
212. PRIN. OF IND III (5). LEC. 2, STUDIO 8. Pr., IND 211 and COL. Structural and functional relationship of design elements; convenience, utility, safety, maintenance.
221. MATERIALS & TECHNOLOGY (5). Pr., sophomore standing. The properties and use of various materials in manufacture and a study of the machine and tool processes used by industry. Survey from the designer's viewpoint.
222. INDUSTRIAL DESIGN METHODS (5). Pr., sophomore standing. The methods and organizational procedures employed in the analysis and solutions of design problems. Survey of philosophies and theories of design.
307. ANTHROPOMETRY (5). Pr., IND 212, 222. Survey and introduction to the field of body measurements and movements in relation to design.
308. DESIGN WORKSHOP (5). LEC. 2, LAB. 8. Pr., IND 210, 212. Modelmaking and creative modeling. Study models, presentation models, mock-ups, prototypes.
310. INDUSTRIAL DESIGN/CONCEPT DEVELOPMENT (6). LEC. 2, STUDIO 8. Pr., IND 212, 221, 222. Emphasis on concept development using drawing and rendering skills for idea communication and presentation.
311. INDUSTRIAL DESIGN/PACKAGING (6). LEC. 2, STUDIO 8. Pr., IND 221, 222, 310. Packaging, trademark and corporate identity programs. Exhibition and display fixtures.
312. INDUSTRIAL DESIGN/PRODUCT DESIGN (6). LEC. 2, STUDIO 8. Pr., IND 311. Product design utilizing principles of design methodology from idea stages through working models.
385. SEMINAR IN IND (5). Pr., IND 212, junior standing. Selected topics in industrial design.
410. INDUSTRIAL DESIGN/SYSTEMS (6). LEC. 2, STUDIO 8. Pr., IND 312, 307, 308. Design or redesign of products and systems.
411. INDUSTRIAL DESIGN/ADVANCED PROD. (6). LEC. 2, STUDIO 8. Pr., IND 410. Design or redesign of products and systems of advanced complexity.
412. INDUSTRIAL DESIGN THESIS (6). LEC. 2, STUDIO 8. Pr., IND 411. A project involving all design phases; project of the student's own selection and approved by the instructor. Presentation of graphics, models and written explanations, and oral presentation before a Design Jury. Thesis material may be retained by the department for one year.

415. HISTORY OF INDUSTRIAL DESIGN I (5). Pr., IND 312. Design from the first Industrial Revolution to the present, with emphasis on the relation between design and science, art, technology and the humanities.
420. PROFESSIONAL PRACTICE (5). Pr., 4th year standing. Studies in office organizations, contracts, reports, professional ethics, time planning, product litigation, cost estimating, patent policy and related research areas.

### ADVANCED UNDERGRADUATE AND GRADUATE

485. SEMINAR IN IND (5). Pr., 4th year standing. Development of individual projects. Research, design, reports, on approved topics. May be repeated for a maximum of 10 hours.
518. HISTORY OF INDUSTRIAL DESIGN II (5). Design from the beginning of artifacts to the first Industrial Revolution, with emphasis on the relationship between design and sciences, art, technology, and the humanities.
585. SPECIAL PROBLEMS (2-6). Development of individual projects. Research, design and reports on approved topics.
586. CASE STUDIES IN DESIGN (5). Design projects undertaken by industry will be studied by examination of artifacts and records, by interviews with professionals responsible for the phases of the projects, and by class discussions of this data and its implication. Focus on the socio-cultural relevancy of the artifacts.

### Industrial Engineering (IE)

Professors Unger, Head, Black, Cox, Herring, Hool, Maghsoodloo, Park and Smith  
Associate Professors Bulfin, Jiang and White  
Assistant Professors Mykytko, Nyamekye and Thomas

General Curriculum, GC, students (those with undeclared majors) may enroll only with departmental consent.

172. GRAPHICAL COMMUNICATION & DESIGN (3). LEC. 2, LAB. 3. Graphical concepts and projective geometry relating to spatial visualization and communication in design, including technical sketching, instrument drawing and computer-aided drafting and design.
250. COMPUTER PROGRAMMING (3). LEC. 2, LAB. 3. Coreq., MH 264. Introductory computer programming using the FORTRAN programming language with emphasis on mathematical and engineering problems. Not open to students with credit in CSE 120 or 204.
260. ENGINEERING COMPUTATION (3). LEC. 2, LAB. 3. Pr., IE 250. An intermediate computer course dealing with the use of MS DOS based microcomputers. Application topics include an indepth study of MS (or PC) DOS, the how-to of various microcomputer packages used in later IE courses, brief introductions to word processing and spreadsheets, use of files, and a comparison of FORTRAN to MS BASIC.
301. METHODS ENGINEERING AND WORK MEASUREMENT (3). Pr., IE 333. Classical industrial engineering procedures related to the design of efficient work methods. Analysis of the work measurement process and design of labor content assessment systems.
331. PROBABILITY FOR ENGINEERS (3). Coreq., MH 264. Basic probability, random variables and distribution functions.
332. ENGINEERING STATISTICS I (3). Pr., IE 331. Statistical inference, sampling distributions and their applications. Emphasis is on statistical inference.
333. ENGINEERING STATISTICS II (3). Pr., IE 332. One and two-way analysis of variance. General factorial experiments, confounding in blocks, fractional factorials, regression and correlation. Emphasis is on factorial experiments.
341. OPERATIONS RESEARCH I: MODELS (3). Pr., CSE 120, MH 264. Formulation, interpretation and implementation of mathematical models in operations research, including linear, non-linear, dynamic and integer programming, networks, decision trees and queues.
343. OPERATIONS RESEARCH II: CONCEPTS AND METHODS (3). Pr., IE341, MH 266. An introduction to the underlying concepts of operations research methodology. Emphasis will be on optimization techniques, stressing optimality conditions and how they are used to develop algorithms. Major emphasis will be on algorithms for linear programming.
360. ENGINEERING ECONOMIC ANALYSIS (3). Pr., MH 264, CSE 120. The development of principles required in engineering economy studies and other decision-making oriented courses. Topics include interest and interest formula derivations, economic decision criteria, capital budgeting, depreciation methods, tax considerations, replacement analysis and inflation.
380. MANUFACTURING ENGINEERING I: MATERIALS AND PROCESSES (4). LEC. 3, LAB. 3. Pr., MTL 220, EGR 207. Engineering science and design of manufacturing materials, processes, and systems.
390. SEMINAR IN INDUSTRIAL ENGINEERING (1). LEC. 1. Pr., junior standing in IE. Discussion of current problems, professional practice, and professional opportunities. (Restricted to Industrial Engineering majors and is to be taken in the third or fourth quarter prior to graduation.)
401. OCCUPATIONAL ERGONOMICS AND SAFETY (5). Pr., senior standing. Basic principles of occupational ergonomics and safety engineering in the analysis, evaluation and design of industrial work areas and processes which include human operators.
422. PRODUCTION CONTROL FUNCTIONS I (3). Pr., IE 333, 341, 360. Functions of production control, including forecasting systems, inventory control systems and aggregate production planning.



425. PRODUCTION CONTROL FUNCTIONS II (3). Pr., IE 422. Functions of production control, including models for production planning, scheduling and control, line balancing, manufacturing resource planning and project management systems.
433. STATISTICAL QUALITY CONTROL (3). Pr., IE 332. Control charts for variables and for attributes, Methods for quality improvement. Acceptance sampling by attributes and by variables. Emphasis will be on statistical process control.
458. SIMULATION (3). LEC. 2, LAB. 3. Pr., CSE 120, IE 333. Simulation procedures for solving complex systems analysis problems. Emphasis on random processes, model building, and construction of computer simulation models.
470. INFORMATION-DECISION SYSTEMS (3). LEC. 2, LAB. 3. Pr., CSE 120. Coreq., IE 422. Interrelated components of complex management information-decision systems. Design considerations for systems involving computers as a principal data processing device.
480. MANUFACTURING ENGINEERING III: TOOL DESIGN (3). LEC. 2, LAB. 3. Pr., IE 380 or equivalent. The design of workholding devices (jigs and fixtures and hands of robots) and blanking and piercing dies, including the fundamentals of tolerances, locating, and clamping principles.
484. PROBLEMS IN MACHINING (5). LEC. 3, LAB. 4. Pr., IE 380. Advanced phases of metal machining with emphasis on production machines and accessories.
- 490-491-492. INDUSTRIAL ENGINEERING PROBLEMS (1-5). Pr., department head approval. Individual student endeavor under staff supervision involving special problems of an undergraduate nature in Industrial Engineering. Interested student must submit written proposal to department head.
- 493-494-495. INDUSTRIAL ENGINEERING SPECIAL TOPICS (1-5). Pr., departmental approval. Special topics courses of an undergraduate nature pertinent to Industrial Engineering. Specific prerequisites will be determined and announced for each offering.
497. SENIOR DESIGN PROJECT I (2). LEC. 1, LAB. 2. Pr., IE 301. Coreq., IE 401, 425, 433. A capstone course in which undergraduate coursework principles are brought to bear upon a design problem in a cooperating industry or institution. (Should be taken the quarter immediately prior to the taking of IE 428.)
498. SENIOR DESIGN PROJECT II (2). LAB. 6. Pr., IE 427. Continuation of the design problem begun in IE 427. Completion of the project and written and oral presentation of the results to the cooperating organization. (Should be taken during student's final quarter.)
499. HONORS THESIS (1-6). Pr., department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (IE Honors Program students only. May be repeated once for a maximum of six total credit hours.)

## COURSES NOT OPEN TO IE MAJORS

180. BASIC MANUFACTURING PROCESSES (3). Introduction to the materials and processes used in manufacturing, with emphasis on modern technology (CAD/CAM, Robotics, etc.) and manufacturing/production systems.
430. ENGINEERING STATISTICS (5). Pr., MH 264. Basic probability, random variables, discrete and continuous distributions, sampling distributions, hypothesis testing, estimation, regression and correlation, one-way analysis of variance, testing goodness of fit. (Not open to students with credit in IE 331.)
440. OPERATIONS RESEARCH (5). Pr., MH 266, IE 430 or equivalent or concurrently. Model construction, linear programming, network models, dynamic models, stochastic models, queueing theory, decision theory and simulation. (Not open to students with credit in IE 343.)

## ADVANCED UNDERGRADUATE AND GRADUATE COURSES

501. SAFETY ENGINEERING I (3). Pr., IE 401 or equivalent. Fundamentals of occupational safety engineering with emphasis upon hazard recognition and accident prevention techniques in production environments.
502. SYSTEMS ANALYSIS FOR SAFETY (3). Pr., IE 501, 331 or 430, or equivalent. Systems Safety Engineering analysis techniques including Fault-tree, reliability, and cost benefit analysis.
503. OCCUPATIONAL SAFETY AND ERGONOMICS FOR PRODUCTION ENGINEERS AND MANAGERS (5). Fundamentals of occupational safety engineering and ergonomics with emphasis on the responsibilities of production engineering and management. (Not open to students with credit in IE 401 or 501).
508. HUMAN FACTORS ENGINEERING (5). Pr., PG 211 or 212. Human factors engineering in systems design including applied anthropometry, work place design; assessment of work, noise and heat stress; and equipment design. (Not open to students with credit in IE 401).
525. INVENTORY CONTROL (3). Pr., IE 343, 422, 433. Application of quantitative methods to the control of Industrial Inventories.
526. INDUSTRIAL MAINTENANCE ENGINEERING (3). Pr., IE 422, 470. Industrial maintenance and organization including planning and scheduling, motivation, inspection, preventive maintenance, replacement, data processing and relation to other areas.
529. OPERATIONAL CONTROL SYSTEM DESIGN (3). Pr., IE 425. The design of operational planning and control systems. Integration of individual systems functions. concept of total systems optimization.
533. OFF-LINE QUALITY CONTROL (3). Pr., IE 333. Taguchi's quality loss function, three stages of quality design and analysis of Taguchi's signal to noise ratio.
534. QUALITY SYSTEMS DESIGN AND IMPLEMENTATION (3). Pr., IE 533 or COI. On-line and off-line quality engineering methods and their use in integrated total quality control systems.
536. SAMPLING AND SURVEY TECHNIQUES (3). Pr., IE 333. Theory and application of statistical sampling and survey methods, with emphasis on methods optimization.

538. RELIABILITY ENGINEERING (3). Pr., IE 333. Reliability, maintenance, and replacement, with emphasis on quantitatively descriptive methods to be used for problem solving.
541. DETERMINISTIC OPERATIONS RESEARCH (3). Pr., IE 343. In-depth treatment of deterministic operations research, particularly the concepts and methodology of non-linear, dynamic, integer and network optimization.
542. DYNAMIC PROGRAMMING (3). Pr., IE 541. The theory and methods of dynamic programming will be presented. Specific applications will be discussed.
545. PROJECT MANAGEMENT (3). Pr., IE 440 or 343. Project management and development with primary emphasis on use of operations research methods and cost analysis. Applications of CPM, PERT, and GERT to project management.
547. SEARCH METHODS FOR OPTIMIZATION (3). Pr., MH 264 and senior standing. Single and multivariate search techniques and strategies which are used in finding the optimum of discrete or continuous functions about which full knowledge is not available.
549. SENSITIVITY ANALYSIS IN OPERATIONS RESEARCH MODELING (3). Pr., IE 343, 422 and 456 or equivalent. An investigation of how an operations research model's decisions and returns change with respect to changes in model parameters and characteristics. Several types of models are considered and examples are presented.
551. STOCHASTIC OPERATIONS RESEARCH (3). Pr., IE 323, 343. Stochastic operations research models with emphasis on model formation, solution and interpretation of results. Primary emphasis on stochastic processes, queueing theory and their applications.
560. INTERMEDIATE ENGINEERING ECONOMIC ANALYSIS (3). LEC. 3. Pr., IE 360. Continuation of IE 360. Emphasis on cost estimating techniques and applications of engineering economic principles to various aspects of industrial engineering problems.
572. PRINCIPLES OF INTERACTIVE COMPUTER GRAPHICS (3). Pr., MH 266, CSE 120 or equivalent, and junior standing. Computer graphics with emphasis on engineering applications. Typical topics include hardware characteristics of graphics system, mathematical elements and programming techniques for two- and three-dimensional graphics, user interface design and selected engineering applications.
580. COMPUTERS IN CONTROL ENGINEERING (3). Pr., COI. Computer use in closed-loop feedback control and sequential control. Basic microprocessor architecture and operation, sensors and instrumentation, computer interface techniques and introductory discrete control theory.
584. MANUFACTURING ENGINEERING IV: ROBOTICS (3). LEC. 2, LAB. 3. Pr., IE 380, 470. Fundamentals of robotic applications; introduction to the concept of programmed manufacturing systems.
588. MANUFACTURING ENGINEERING II: GAGES AND MEASUREMENTS (3). LEC. 2, LAB. 3. Pr., IE 380. The science of measurement as applied to production and inspection of industrial products.
- 590-591-592. INDUSTRIAL ENGINEERING PROBLEMS (1-5). Pr., department head approval. Individual student endeavor under staff supervision involving special problems of an advanced undergraduate or graduate nature in Industrial Engineering. Interested student must submit written proposal to department head.
- 593-594-595. INDUSTRIAL ENGINEERING SPECIAL TOPICS (1-5). Pr., departmental approval. Special topics courses of an advanced undergraduate or graduate nature pertinent to Industrial Engineering. Specific prerequisites will be determined and announced for each such offering.

## Journalism (JM)

Professors Simms, Head, Brown, Campbell and Logue

Associate Professors Morgan and Williams

Assistant Professor Johnson

Freshman English is prerequisite for all journalism courses except JM 101.

101. NEWSPAPER STYLE (3). Required for all journalism majors and minors. The AP-UPI Stylebook and common errors in word selection in newspaper writing.
221. BEGINNING NEWSWRITING (5). Pr., JM 101; reasonable typewriting skills. Introduction to newswriting, newspaper style, and mechanical practice.
222. NEWSPAPER LAB (1). Pr., JM or PRJ major, JM 221. (S-U grading only). Student will work a minimum of 20 hours for The Auburn Plainsman in reporting, writing, editing or page makeup.
304. INTRODUCTION TO PUBLIC RELATIONS (5). Pr., JM 101. The broad spectrum of the field of public relations. The various communication skills and technologies for public relations will be explored. Credit for this course precludes credit for PRCM 304.
313. REPORTING (5). Pr., JM 221; reasonable typewriting skills. The technical aspects of reporting and newsgathering methods.
314. EDITING (3). Pr., JM 221. Methods of editing copy, writing headlines and proof reading.
315. BASIC JOURNALISM (3). Not to be used for a major or minor in Journalism. Introduces practices of news coverage and writing.
321. NEWSPAPER DESIGN (5). Pr., JM 221. Typography and design with practice applications in putting together newspaper pages.
322. FEATURE WRITING (5). Pr., JM 221 or COI. Gathering material for the writing of "human interest" and feature articles for newspapers and magazines, with consideration given to the marketing of manuscripts.
323. NEWSPAPER MANAGEMENT (5). Pr., JM 221 and 321. Procedures, policies, ethical considerations and problems in producing the community newspaper.

## Law Enforcement

404. CASE STUDIES IN PUBLIC RELATIONS (5). Pr., JM 304 or PRCM 304 or COI. Investigation and analysis of public relations problems through case studies. Credit for this course precludes credit for PRCM 404.
421. PHOTO-JOURNALISM (5). Uses and processes of photography in the newspaper and magazine field. Operation of press cameras and the technique of developing, printing, and enlarging of pictures is provided.
- 422-423. JOURNALISM WORKSHOP (3-3). Pr., JM 313, 314, 321, 322, COI. A two-quarter course giving practical experience in preparation of newspaper, radio, television, and magazine copy through supervised work. The student is expected to work 10 hours per week.
425. JOURNALISM INTERNSHIP (6). Pr., JM 313, 314, 321, 322, COI. A full-time internship of at least 10 weeks with an approved publication, serving as a regular staff member under the direction of the editor.
435. MAGAZINE CONCEPTS (5). Pr., JM 221. Methods and problems of publishing the popular and trade magazine.
465. HISTORY AND PRINCIPLES OF JOURNALISM (5). Development of the American Press, principles and ideals of modern journalism, and law of the press and radio.
470. FREELANCE FEATURE WRITING (5). Pr., JM 314, 322. Production and selling of ideas, articles and photographs in local markets and to national publications.
475. JOURNALISM SPECIAL STUDIES (1-5). Pr., departmental approval. Research and analysis of specific journalistic problems. Or lectures and seminars by visiting professional journalists.
485. ADVANCED REPORTING (3). Pr., JM 313, 314, 321, 322, COI. Developing and writing news stories under deadline pressure; investigative and interpretive reporting.

## Laboratory Technology (LT)

Associate Professor Kohl

Adjunct Associate Clinical Professors Adams, Bridger,

Davis, C. B. Elliott, and H. C. Elliott

Adjunct Instructor Milly

Adjunct Clinical Instructors Cooper, Crider, Lushington, Marr, and Chappell

101. ORIENTATION (1). Fall, Winter. Aims, objectives, and requirements for careers in Medical and Laboratory Technology.
301. HEMATOLOGY (5). LEC. 3, LAB. 6. Pr., CH 207. Origin, maturation, morphology and function of blood cells; theory of hemostasis; routine hematological laboratory techniques.
401. ADVANCED HEMATOLOGY (5). LEC. 3, LAB. 6. Pr., LT 301. Advanced study of lymphohematopoietic and hemostatic disorders; laboratory techniques for evaluation and diagnosis of blood disorders.
405. IMMUNOLOGY II (5). LEC. 3, LAB. 6. Pr., MB 543, junior standing. Immunogenetics, clinical significance of blood group antigens and antibodies, theory and techniques of the serological study of human blood groups.
422. HOSPITAL LABORATORY PRACTICE (5). LAB. 15. Pr., LT 301. Practice applications of the principles, procedures, and techniques encountered in hospital laboratories.
525. CLINICAL LABORATORY INSTRUMENTATION (5). LEC. 3, LAB. 6. Pr., CH 519 or 508 or COI. Theoretical and practical application of continuous flow analysis, atomic absorption spectrophotometry, radioimmunoassay and chromatographic techniques used in the analysis of body fluids.

## Law Enforcement (LE)

### (DEPARTMENT OF POLITICAL SCIENCE)

Assistant Professors Kelly and Pendergast, *CJ Coordinator*

Adjunct Assistant Professor V. N. Abbott

260. SURVEY OF LAW ENFORCEMENT (5). Pr., sophomore standing. Introduction to the philosophical and historical backgrounds; agencies and processes; purposes and functions; administration and technical problems; career orientation. (Same as PO 260.)
261. CRIMINAL EVIDENCE (3). Comprehensive analysis of the rules of evidence with particular emphasis on evidence obtained through search, seizure and arrest.
262. CRIMINAL INVESTIGATION (5). Pr., sophomore standing. Criminal investigation procedures, including theory of investigation, case preparation, specific techniques for selected offenses, questioning of suspects and witnesses, modus operandi and problems in criminal investigation.
270. CAREER EXPLORATION AND PLANNING (2). Pr., LE/PO 260 and COI. (S-U grading only.) Career opportunities and demands. Offered all quarters for CJL and CJO. Offered only Fall and Winter quarters for CJY with orientation and participation prior to the quarter.
335. CRIMINAL LAW FOR POLICE OFFICERS (3). Pr., PO 209, 210, or LE/PO 260. Statutory criminal law and criminal court procedures as applicable to the law enforcement function. Considers the impact of statutory law and common law on police procedures and policies.
361. SURVEY OF CRIMINALISTICS (5). Pr., LE 262, junior standing. Survey of scientific crime detection methods; crime scene search, identification and preservation of evidence; detection of deception, blood alcohol content, fingerprint identification and related subjects. Lab four hours each week.
363. POLICE ADMINISTRATION AND ORGANIZATION (5). Pr., junior standing. Principles of organization and administration in law enforcement; functions and activities; planning and research; community relations; personnel and training; inspection and control; policy formulation.

412. COMPARATIVE CRIMINAL JUSTICE SYSTEMS (5). Pr., PO 209, PO/LE 260, or PO 312. Institutional comparison and study of social control problems and policies, and functional analysis of the criminal justice systems of selected countries. (Same course as PO 412.)
451. CRIMINAL JUSTICE READING COURSE. (MAXIMUM OF 5 CREDITS). Pr., COI. Readings in criminal justice specialization by agreement of student and instructor.
461. SEMINAR IN POLICE PROBLEMS (5). Pr., LE 363 or 464. Review Analysis of major contemporary problems and issues.
464. INTERNSHIP (5-10). Pr., LE 270, 10 LE credits, SCR 302 and COI. Internship is with an approved law enforcement, prosecutive, corrections or youth services agency under joint supervision of the agency and the CJ Internship advisor. Written reports, conferences and a final seminar on the internship are required.

### **Management (MN)**

Professors Snyder, Head, Alexander, Armenakis, Boulton, Boyles, Feild,  
Giles, Holley, Mitra and Mossholder

Associate Professors Carr, Davis, Gibson, Ledbetter, Niebuhr,  
Norris, Snow and Wolters

Assistant Professors Ford, L. Gardiner, S. Gardiner, Harris, Kennon,  
Oswald, Rainer, Sankar and Sutton

Effective Fall Quarter 1990, a 2.0 GPA will be required for enrollment in any Business course at the 300-level or above. This rule will apply to both Business and non-Business students.

207. INTRODUCTION TO COMPUTER PROGRAMMING (3). Pr., 10 hours math, sophomore standing. Introduction to the use of the computer as a tool in solving business problems, using an appropriate programming language in both a time shared and batch processing environment.
301. BUSINESS AND ECONOMIC STATISTICS I (5). Pr., MH 169 or equivalent. Descriptive statistics; probability; probability distributions; normal distribution; introduction to statistical inference making, confidence intervals, hypothesis testing; simple linear regression analysis.
305. ADVANCED COMPUTER PROGRAMMING (5). Pr., MN 207. File handling, formatted output, structured programming, string manipulation, applications program/operating systems intercommunication.
307. BUSINESS COMPUTER APPLICATIONS (5). Pr., MN 207. Computerizing business applications using a current business language.
310. PRINCIPLES OF MANAGEMENT (5). Pr., junior standing. Management functions and the application of management principles in organizations.
314. INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (2). Pr., CSE 100, MN 310. The role of computer-based information in business. Covers systems concepts, information management and decision-making concepts related to information systems.
342. HUMAN RESOURCES MANAGEMENT (5). Pr., MN 310, junior standing. Management of labor, dealing with selection, training, placement, turnover, payment policies, employee representation, etc.
346. ORGANIZATIONAL BEHAVIOR (5). Pr., MN 310, junior standing. Analysis and application of theories and techniques for understanding, prediction, and management of human behavior in the organizational context.
374. BUSINESS AND ECONOMIC STATISTICS II (5). Pr., MN 301 or equivalent, junior standing. Simple linear regression analysis, inferences and predictions from model; multiple regression analysis; experimental design and analysis of variance; goodness of fit tests; nonparametric tests.
375. NONPARAMETRIC STATISTICS (3). Pr., MN 301. The analysis of business and economic data by distribution-free statistical methods.
380. PRINCIPLES OF OPERATIONS MANAGEMENT (5). Pr., MN 301, 310, junior standing. Modern scientific management as applied in the actual control and operation of industrial enterprises.
381. MANAGEMENT DECISION MAKING (5). Pr., MN 301, FI 361, junior standing. Various quantitative techniques as aids in managerial decision making under conditions of perfect and imperfect knowledge.
382. MANAGEMENT INFORMATION SYSTEMS (5). Pr., MN 301 or MT 336, junior standing. Analysis, design, and implementation of information systems for the management of business organizations; use of various software packages for business applications.
385. PRODUCTIVITY MANAGEMENT (5). Pr., MN 380, junior standing. Application of management procedures and techniques to analyze and control production methods and processes.
386. MATERIALS MANAGEMENT I (5). Pr., MN 380, junior standing. Application of management procedures and techniques to the acquisition, inventory, utilization, and distribution of materials in manufacturing.
387. MATERIALS MANAGEMENT II (5). Pr., MN 386, junior standing. Continuation of MN 386, includes material requirements planning, capacity planning and control, and shop floor control.
400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by the committee directing the Management Department Intern Program. (S-U graded).
401. ANALYSIS AND DESIGN OF BUSINESS INFORMATION SYSTEMS (5). Pr., MN 314 or equivalent. General systems techniques, systems analysis and design, database considerations, modern developments, project planning and control, total system integration.
404. TELECOMMUNICATIONS MANAGEMENT (5). Pr., MN 314. Telecommunications and data communications network management for business.

405. INFORMATION RESOURCE MANAGEMENT (5). Pr., MN 314. Information Resource Management (IRM) concepts, evolution and trends.
410. INTERNATIONAL BUSINESS MANAGEMENT (5). Pr., EC 200, 202, MN 310, MT 331, FI 361, junior standing. Management of multi-national firms which own subsidiaries in several countries.
414. ENTREPRENEURSHIP (5). Pr., AC 211, 212, FI 361, EC 200, 202, MN 301, 310, MT 255, 331. The elements of entrepreneurship as they relate to the planning and development of new ventures. Emphasis is on the use of decision-making skills in bringing a new business idea to fruition.
415. SMALL BUSINESS MANAGEMENT (5). Pr., MN 414. A consulting opportunity which provides a test of the student's ability to apply skills and knowledge to the problems of an existing small business.
420. INDUSTRIAL PROCUREMENT (5). Pr., MN 380, junior standing. Role, procedures, responsibilities, and management of materials acquisition function in industry. Credit cannot be received for MT 434 and MN 420.
421. MANAGEMENT OF SERVICE OPERATIONS (4). Pr., MN 380. Analysis of operations management activities in service delivery systems. Emphasis placed on a total systems approach to service management.
440. ORGANIZATION THEORY (5). Pr., MN 346, junior standing. Organizations as socio-economic-political systems for collective action imbedded in a largely uncontrollable environment.
443. LABOR RELATIONS (5). Pr., junior standing. General survey of the development of collective bargaining, major provisions of labor law, and bargaining issues of craft and industrial unions.
470. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
474. QUALITY ASSURANCE (5). Pr., MN 301, 380, junior standing. Fundamental concepts in quality assurance; tools and techniques necessary to carry out quality assurance functions; use of control charts and acceptance sampling plans.
475. MULTICRITERIA DECISION MAKING (3). Pr., MN 380, 381. Quantitative methods and their application in production and distribution problems of business.
480. BUSINESS POLICIES AND ADMINISTRATION (5). Pr., AC 211, 212, FI 361, EC 200, 202, EHA 415, MN 310, MT 255, 331, senior standing. Formulation and application of objectives, strategy, and policies pertaining to a total organization. Emphasis on problem-solving and the relationships between the functional areas of an organization.
484. OPERATIONS MANAGEMENT POLICIES (5). Pr., FI 361, EHA 415, MN 380, 385, 386, 387, MT 331. Capstone course for OM students. Application of material presented.
490. SPECIAL PROBLEMS (1-10). Pr., COI, junior standing. May be repeated. Investigation and research into problems with special interest for the student. (S-U graded).
496. READINGS IN MANAGEMENT (5). Pr., MN 310, junior standing. Readings from prominent periodicals and journals in management theories, practices and functions.

#### ADVANCED UNDERGRADUATE AND GRADUATE

501. LABOR RELATIONS LAW (5). Pr., MN 443, junior standing. Analysis of background, content and significance of industrial relations law.
517. LABOR RELATIONS IN PUBLIC ORGANIZATIONS (3). Pr., junior standing. The background, legal and constitutional aspects and management of group negotiations and collective bargaining in public employment. (Same as PO 517.)
546. PERSONNEL ADMINISTRATION LEGISLATION (5). Pr., MN 342, junior standing. Legal aspects of personnel administration activities.
547. EMPLOYEE COMPENSATION (5). Pr., MN 342, junior standing. Factors, philosophy, design, and problems of administration in compensation programs.
550. PERSONNEL SELECTION AND PLACEMENT (5). Pr., MN 301 or PG 315 or equivalent, MN 342, junior standing. Factors involved in developing an effective system for selecting, classifying, and placing personnel.
551. MANPOWER PLANNING, DEVELOPMENT, AND APPRAISAL (5). Pr., MN 342, junior standing. Theory and practice plus design of managerial systems in these specialties.
552. PERSONNEL AND ORGANIZATIONAL RESEARCH (5). Pr., MN 301 or equivalent, 342, 346, junior standing. Research methods used in human resources management. Analysis of human resource and organizational research problems.
553. LABOR NEGOTIATION AND ARBITRATION (5). Pr., MN 443, junior standing. Bargaining issues, preparation for contract negotiation, interest and grievance arbitration of labor-management issues.
554. INTERNATIONAL LABOR RELATIONS (3). Pr., MN 443 or MN 410, junior standing. Variations among nations in the structure and government of trade unions, their political and religious ties, and other factors that influence multinational bargaining. Emphasis on industrialized nations.
560. A SURVEY OF CURRENT TECHNOLOGIES IN MIS (5). Pr., MN 314 or equivalent. Recent developments in the technologies that impact the effective design, delivery and use of information systems in organizations.
583. DATA BASE MANAGEMENT SYSTEMS (5). Pr., MN 307, junior standing. Business applications software in a data base environment, complex data and file structures, systems design consideration of global and distributed data bases.
588. MIS PROJECTS (5). Pr., MN 401, 583 or equivalent. Capstone course for the MIS professional option. Synthesizing theory and principles of MIS.



## Marketing and Transportation (MT)

Professors Baker, Bellenger and Lambert

Associate Professors Guffey, Head, Adams, Harris LaTour and Rotfeld

Assistant Professors Abernethy, Butler, Goff, Lacher, Laumer,

Natarajan, Smith and Straughn

Effective Fall Quarter 1990, a 2.0 GPA will be required for enrollment in any Business course at the 300-level and above. This rule will apply to both Business and non-Business students.

## LEGAL ENVIRONMENT

- 241. BUSINESS LAW I (5). Introduction to contracts, sales, torts, and insurance; ethics and social influences; and agency.
- 242. BUSINESS LAW II (5). Legal principles concerning secured transactions, bankruptcy, suretyship, trusts and estates, partnership law, real and personal property, corporations, federal securities, regulations, accountant's legal liability, negotiable instruments and ethics and social influences.
- 255. LEGAL AND SOCIAL ENVIRONMENT OF BUSINESS (4). Legal and social environment for business operation with emphasis on contemporary issues.
- 344. ENVIRONMENTAL LAW (4). Pr., junior standing. federal, state, and local law on conservation and regulation of environmental matters.

## MARKETING

- 331. PRINCIPLES OF MARKETING (5). Pr., EC 202 or AEC 202 or EC 301 and junior standing. A general survey of the field of marketing covering marketing channels, functions, methods and institutions.
- 332. MARKETING COMMUNICATION MANAGEMENT (5). Pr., MT 331, junior standing, not open to marketing majors. Credit cannot be received for both MT 332 and MT 432. An examination of the principles and applications of promotion in marketing.
- 333. MERCHANDISING MANAGEMENT (5). Pr., MT 331, junior standing, not open to marketing majors. Credit cannot be received for both MT 333 and MT 433. An examination and application of retail merchandising management concepts, principles and fundamentals.
- 336. QUANTITATIVE ANALYSIS IN MARKETING (5). Pr., PA 111 or 101, CSE 204, MT 331, MH 161, 169 and junior standing. Examination of the role of quantitative methods in implementing marketing strategy.
- 341. BUYER BEHAVIOR (5). Pr., MT 331, PG 211, and junior standing. Analysis of the buying process as it is affected by environmental and institutional forces and development of market strategies which recognize these factors.
- 347. FUNDAMENTALS OF SELLING (5). Pr., MT 331, 341, COM 311 and junior standing. Knowledge of buyer behavior and skill requirements necessary for successful selling; the sales process; business and social responsibilities of salespersons.
- 400. STUDENT INTERNSHIP PROGRAM (5). Pr., junior standing and selection by the committee directing the Marketing and Transportation Intern Program. Credit hours are not applicable as departmental electives. S-U credit. Summer only. (May be repeated for a maximum of 10 hours credit).
- 432. PROMOTIONAL STRATEGY (5). Pr., MT 331, 336, 341, and junior standing. Problems of persuasive marketing strategy, promotional objectives, methods of implementing these objectives, and the approaches by which the methods might be blended.
- 433. RETAIL STORE MANAGEMENT (5). Pr., MT 331, 336, 341, and junior standing. Principles and practices in the scientific operation of the retail store. Store location, layout, buying, pricing, and merchandise control.
- 434. PURCHASING (5). Pr., MT 331, 341 and junior standing. Objectives, control, and the direction of industrial purchasing. Credit cannot be received for MT 434 and MN 420.
- 436. MARKETING RESEARCH METHODOLOGY (5). Pr., PA 211 or 101, MT 331, 336, 341 and junior standing. Methods of scientific research in the field of marketing and their application to the solution of marketing problems.
- 437. SALES MANAGEMENT (5). Pr., MT 331, 336, 341, and junior standing. Principles and practices of sound organization and administration of sales organization. Includes consideration of: sales department organization, selecting, training, compensating, and supervising sales planning, setting up sales territories and quotas.
- 438. MARKETING CHANNEL SYSTEMS (5). Pr., MT 331, 341 and junior standing. The nature and role of marketing channels. Major marketing strategy problems such as designing channel objectives and constraints, distinguishing major channel alternatives, and motivating, evaluating and controlling channel members.
- 440. INTERNATIONAL MARKETING (5). Pr., MT 331, 341, completion of freshman math requirement, and junior standing. Adapting the marketing process of the domestic firm to international operations and the institutional structure that exists to service foreign markets and the practice of marketing administration by firms operating within these markets.
- 470. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
- 477. BUSINESS LOGISTICS (5). Pr., MT 336 and junior standing. Problems and analysis in the design and management of logistics systems.
- 490. SPECIAL PROBLEMS IN MARKETING (5). Pr., MT 331 and senior standing. Qualified students conduct investigations of special problems in Marketing. S-U credit. (May be repeated for a maximum of 10 hours credit.)
- 498. MARKETING STRATEGY (5). Pr., MT 331, 336, 341, 436 and completion of 15 hours of departmental electives. An integrative capstone course for marketing majors with special emphasis on strategic planning.

ADVANCED UNDERGRADUATE

581. SPECIAL STUDIES IN MARKETING RESEARCH (5). Pr., MT 336, 341, 436. Specialized indepth study and research projects within a particular subject area.
582. SPECIAL STUDIES IN RETAILING/MERCHANDISING (5). Pr., MT 336, 341, 433, 436. Specialized indepth study and research projects with in a particular subject area.
583. SPECIAL STUDIES IN PROMOTION (5). Pr., MT 336, 341, 432, 436. Specialized indepth study and research projects within a particular subject area.
584. SPECIAL STUDIES IN PRODUCT MANAGEMENT (5). Pr., MT 436. Specialized indepth study and research projects in product management.

TRANSPORTATION AND PHYSICAL DISTRIBUTION

372. PRINCIPLES OF TRANSPORTATION (5). Pr., EC 200 and junior standig. The development of systems of transportation. Analysis of rates and their effects upon commerce and industry. Government regulation of transportation agencies.
373. INTRODUCTION TO PHYSICAL DISTRIBUTION (5). Pr., MT 331 and junior standing. Fundamentals of physical distribution activities and their interrelationships in the management of the distribution process.
400. STUDENT INTERNSHIP PROGRAM (5). Pr., Junior standing and selection by the committee directing the Marketing and Transportation Intern Program. Credit hours are not applicable as departmental electives. S-U credit. Summer only. (May be repeated for a maximum of 10 hours credit).
470. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
474. INDUSTRIAL TRAFFIC MANAGEMENT (5). Pr., MT 372 and junior standing or COI. Problems and policies involved in the traffic management function of the industrial firm.
475. TRANSPORTATION REGULATION AND PUBLIC POLICY (5). Pr., MT 372 and junior standing or COI. Economic, legislative, and administrative problems related to regulation of transportation and utility rates and services.
476. CARRIER MANAGEMENT POLICY AND PRACTICE (5). Pr., MT 372, 475, or COI and junior standing. Problems and policies in the management and administration of transport enterprises of different modal types, primarily air, rail and motor.
477. BUSINESS LOGISTICS (5). Pr., MT 336 and junior standing. Problems and analysis in the design and management of logistics systems.
490. SPECIAL PROBLEMS IN TRANSPORTATION (5). Pr., MT 372 and senior standing. Qualified students conduct investigations of special problems in Transportation. S-U credit. (May be repeated for a maximum of 10 hours credit.)

ADVANCED UNDERGRADUATE

588. SPECIAL STUDIES IN TRANSPORTATION/LOGISTICS (5). Pr., MT 372, and two from 373, 475, 476 and 477. Specialized in depth study and research projects within a particular subject area.

Materials Engineering (MTL)

Professors Chin, *Chairman*, Budenstein, Jemian and Wilcox  
Associate Professors Jang, Madsen and Zee  
Assistant Professors Kowbel and Thakur

Responsibility for this curriculum rests with the interdisciplinary Materials Engineering Curriculum Committee. Questions should be directed to the Department of Mechanical Engineering, which administers the program. General Curriculum, GC, students (those with undeclared majors) may enroll only with departmental consent.

210. STRUCTURE OF MATERIALS (3). Pr., CH 103, PS 220 or 205. Theories and structures of crystalline and amorphous materials. Bonding, crystal classes, defects, and atomic movement. (Mainly for Materials majors.)
220. MATERIALS AND PROPERTIES I (3). Pr., CH 103, PS 220. Methods of mechanical testing, effects of environment, deformation and annealing, failure and non-destructive testing as related to the properties of materials.
320. MATERIALS AND PROPERTIES II (4). LEC. 3, LAB. 3. Pr., MTL 220. Relationship between structure and properties of materials; solidification, mechanisms of alloy strengthening, phase transformations, heat treatments and material systems.
336. PHYSICAL ANALYSIS OF MATERIALS I (4). LEC. 3, LAB. 3. Pr., MTL 320. The analysis and interpretation of the structures of materials using optical techniques. Specific physical properties will be measured. Samples will be prepared and processed by the students.
337. PHYSICAL ANALYSIS OF MATERIALS II (3). Pr., MTL 220. The analysis and interpretation of the structures and properties of materials using special techniques. Diffraction, radiography and various non-destructive test procedures will be employed.
338. PHASE DIAGRAMS (3). Coreq., MTL 320. Methods of representing and interpreting phase equilibria. Binary and multicomponent systems. Simpler temperature-composition systems and more complex temperature-pressure-composition systems. Major emphasis on applications. Minor emphasis on phase diagram determination and thermodynamics.

420. STRUCTURE AND PROPERTIES LABORATORY (3). LEC. 1, LAB. 6. Pr., MTL 336. Coreq., MTL 447. Emphasizes the use of processing and thermo-mechanical treatments to control the microstructure of a material. Tests are then conducted on both polymer and metallic materials to investigate the relationship between the microstructure and mechanical properties.
435. PHYSICAL ANALYSIS OF MATERIALS III (4). LEC. 3, LAB. 3. Pr., MTL 320. The evaluation of microscopic structural features, anisotropic materials properties and the detection and interpretation of flaws. Microscopy, radiography and other non-destructive test methods will be employed.
436. ENGINEERING MATERIALS SCIENCE—FERROUS METALLURGY (3). Pr., MTL 336. Design of ferrous metals following modern theory and practice. Hardenability, alloying deformation, and special purpose steels.
445. TRANSFORMATIONS IN CONDENSED PHASES (4). LEC. 3, LAB. 3. Pr., MTL 320, MTL 550, and MTL 436. Important transformations in both metallic and non-metallic materials with crystalline or glass structures. Structures, mechanisms, distinctive characteristics and applications will be studied. Selected transformations will be studied in the laboratory.
446. THEORETICAL MATERIALS ENGINEERING (3). Pr., MTL 575. Coreq. MTL 570, 513. The physical properties of materials in relation to modern theories.
447. MECHANICS OF ENGINEERING MATERIALS (3). Pr., MTL 337. The mechanical properties in relation to structural features of alloys, plastics, ceramic materials and composites under static, dynamic and cyclic service and test conditions. Conditions for the attainment of optimum properties and behavior will be emphasized.
448. INTRODUCTION TO CERAMICS (3). Pr., MTL 210, 320. The engineering applications and design principles of important ceramic materials will be studied with particular attention directed to the structure-property relationships. Both glassy and crystalline ceramic materials will be included.
479. HONORS THESIS (1-6). Pr., COI and department head approval. Individual student directed research and writing of honors thesis. (MTL Honors Program students only. May be repeated once for a maximum of six total credit hours.)

### ADVANCED UNDERGRADUATE AND GRADUATE

513. INTRODUCTION TO X-RAY CRYSTALLOGRAPHY (3). Pr., COI or MTL 337. Principles of crystallography, the reciprocal lattice, theory of x-ray diffraction and the powder, Laue and diffractometer methods.
514. X-RAY AND NDT LABORATORY (3). LEC. 1, LAB. 6. Pr., COI or MTL 513. The analysis and interpretation of the structures and properties of materials using special techniques. Emphasis will be placed on x-ray diffraction and other non-destructive techniques.
515. POLYMER TECHNOLOGY I (3). Pr., MTL 320. Important aspects of polymer science, connection between chemical structure and important properties of modern plastics and synthetic structural materials; the common methods of fabrication of these into articles and the basic chemistry behind their manufacture.
516. POLYMER TECHNOLOGY II (3). Pr., MTL 515 or TE 424. Continuation of MTL 515. Study of polymerization and condensation polymers. Modes of fabrication, special use selection requirements, and study of a number of commercially available materials and their areas of use.
537. MANUFACTURING PROCESSES AND MATERIALS (3). Pr., junior standing, MTL 320 and departmental approval. Principles and engineering problems involved in the fabrication of materials.
550. THERMODYNAMICS OF MATERIALS SYSTEMS (3). Pr., EGR 201, CH 507 and MTL 338. The laws of thermodynamics applied to the stability of materials phases, crystal imperfections, solubility, oxidation, surface and interfacial energy and transformations.
570. ELECTRICAL PROPERTIES OF MATERIALS (3). Pr., EE 302. Studies of the electrical properties of materials with emphasis on semiconductors.
575. RATE PROCESSES IN MATERIALS (3). Pr., MTL 550, or COI and junior standing. Diffusion in the gas, liquid and solid phases and the fundamentals of chemical reaction kinetics pertinent to the crystallization and transformation of materials.

### Mathematics (MH)

Associate Professor Smith, *Coordinator*

For other staff and upper level mathematics courses, see sections for Mathematics—Algebra, Combinatorics and Analysis (MHC) and Mathematics—Foundations, Analysis and Topology (MHT).

The (\*) denotes that the course is not available to majors or graduate students in the area of science or mathematics.

The (\*\*) denotes this is a non-credit course for students in some scientific and technical curricula.

100. MATHEMATICAL INSIGHTS (5). For students in the arts or humanities. Gives students insight into the nature of mathematics by engaging them in mathematical thought processes within a suitable elementary framework. Prior credit for any other University mathematics course precludes credit for this course.
140. COLLEGE ALGEBRA (5). Pr., high school geometry, second year high school algebra or departmental approval. Algebraic techniques, coordinate geometry, functions and relations and their graphs and common logarithms. A preparatory course for MH 151, MH 160 and MH 181. However, credit is not allowed for both MH 140 and 180.

151. FINITE MATHEMATICS (5). Pr., MH 140 or 160. Selections from elementary combinatorial analysis, probability theory, linear algebra, linear programming. Not open, except by special permission of the Department of Mathematics, to students in Engineering or the Mathematics or Physics majors. Credit is not allowed for both MH 151 and 169.
155. ANALYTIC GEOMETRY (5). Pr., MH 160 or equivalent. Plane and solid analytic geometry. Lines, planes, circles, spheres, vectors, conics, change of coordinates, polar coordinates, parametric equations, curve sketching.
160. PRE-CALCULUS WITH TRIGONOMETRY (5). Pr., high school geometry, second year high school algebra or departmental approval.\*\* The basic analytic and geometric properties of the algebraic and trigonometric functions with heavy emphasis on the latter. A preparatory course for the calculus sequence. Students who need a review of algebraic techniques should take MH 140. However, credit is not allowed for both MH 140 and 160.
161. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 140 or 160. Limits, the derivative, applications of the derivative, antiderivatives; the definite integral; the fundamental theorem of calculus. Credit is not allowed for both MH 161 and 191.
162. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 160 and 161. Integrals, applications of the integral, the calculus of the exponential and logarithmic functions. The calculus of the trigonometric and inverse trigonometric functions, the conic sections. Credit is not allowed for both MH 162 and 192.
163. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 162. Techniques of integration, indeterminate forms, improper integrals, solid analytic geometry, multiple integrals. Credit is not allowed for both MH 163 and 193.
169. BUSINESS MATHEMATICS WITH CALCULUS APPLICATIONS (5). Pr., MH 161. Selections from calculus, elementary combinatorial analysis, probability theory, linear algebra, linear programming with emphasis on business applications. Designed for students in the College of Business and not open, except by special permission of the Department of Mathematics, to students in Engineering or the Mathematics or Physics majors. Credit is not allowed for both MH 151 and 169.
- 191-192-193. CALCULUS FOR ENGINEERING AND SCIENCE (5-5-5). Pr., MH 160. Plane and solid analytic geometry, real and vector valued functions, limits, derivatives and antiderivatives of algebraic and trigonometric functions. Integrals, the Fundamental Theorem of Calculus, line integrals, potential functions, force fields, and surface integrals. Methods of integration, in determinate forms, improper integrals. Credit is not allowed for both MH 161-162-163 and 191-192-193.
264. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 163. Infinite series, partial derivatives, vector calculus. Credit is not allowed for both MH 264 and 294.
265. LINEAR DIFFERENTIAL EQUATIONS (3). Coreq., MH 264. First and second-order linear differential equations including the solution of such equations by infinite series.
266. TOPICS IN LINEAR ALGEBRA (3). Pr., MH 163. Linear spaces, vector spaces, linear transformations, matrices and determinants. Not open to students who have credit for MH 337, 531 or 505 or 537.
267. DISCRETE PROBABILITY (5). Coreq., MH 161. Designed for students whose fields require a basic knowledge of probability and for those who plan to take upper level courses in probability and statistics. Conditional probability, independence and random variables with emphasis on discrete random variables.
269. ELEMENTARY DIFFERENTIAL EQUATIONS (5). Pr., MH 264. Ordinary differential equations with applications. Credit for this course precludes credit for MH 265.
271. INTRODUCTION TO MATHEMATICAL PROGRAMMING (3). Coreq., MH 264. Introduction to the organization and characteristics of the digital computer, and to programming in FORTRAN, with applications to problems in algebra and the calculus.
272. MATHEMATICAL PROGRAMMING AND NUMERICAL ALGORITHMS (3). Coreq., MH 265 and 266. Pr., MH 271. Introduction to numerical methods for solution of ordinary differential equations and systems of linear equations. Further programming practice in FORTRAN.
- 281-282. ELEMENTARY MATHEMATICS (5-5). Pr., sophomore standing. Provides appropriate mathematical insights for elementary school teachers. Emphasis is on the structure of the number systems, the basic concepts of algebra and informal geometry. Open for credit only to students in Elementary Education, except by special permission of the Department of Mathematics.
294. CALCULUS FOR ENGINEERING AND SCIENCE (5). Pr., MH 193. A continuation of MH 191-192-193. Sequences, infinite series introduction to complex variables. Credit is not allowed for both MH 264 and 294.
301. HISTORY OF MATHEMATICS (3). Pr., MH 163 or departmental approval. The evolution of modern mathematics from its motivational roots in the physical sciences; the lives and contributions of outstanding mathematicians; the parallel development of mathematics and western culture.
- 331-332. INTRODUCTION TO MODERN ALGEBRA I, II (5-5). Pr., MH 163. Sets, mapping, the integers, isomorphisms, and homomorphisms; groups, rings, fields, ideals. Credit is not allowed for both sequences MH 331-332 and 333-334.
333. ELEMENTARY GROUP THEORY (3). Pr., MH 337. Groups, subgroups, normal subgroups, factor groups, homomorphisms, direct products, Sylow theories.
334. ELEMENTARY RING THEORY (3). Pr., MH 333. Rings, ideals, polynomial rings, prime ideals, maximal ideals, fields of quotients. Credit is not allowed for both sequences MH 331-332 and 333-334.
337. INTRODUCTION TO LINEAR ALGEBRA (5). Pr., MH 163. Matrices; systems of equations; determinants; vector spaces; linear transformations; inner products; unitary, Hermitian and normal matrices; eigenvalues and eigenvectors; diagonalization of Hermitian matrices. Credit for this course precludes credit for MH 266.
339. LINEAR PROGRAMMING (5). Pr., MH 266 or 337. The general linear programming problem; feasible solutions; simplex method; cycling and degeneracy; duality theory; sensitivity analysis; applications.

362. ENGINEERING MATHEMATICS I (3). Pr., MH 265. Fourier Series, partial differential equations, special functions.
371. DISCRETE MATHEMATICS FOR COMPUTER SCIENCE I (3). Pr., MH 266 or 337. Elementary logic, predicate calculus; induction; finite state machines, deterministic and nondeterministic automata, regular grammars.
372. DISCRETE MATHEMATICS FOR COMPUTER SCIENCE II (3). Pr., MH 266 or 337. Equivalence relations, partial order relations, functions, n-ary relations. Graphs: special types, isomorphism, trees, traversal algorithms. Digraphs: transitive closure, connectivity.
399. EXPERIMENTAL LEARNING IN MATHEMATICS (2). Pr., MH 163. Not for credit toward major or minor in mathematics. General elective credit only. Maximum number of credit hours is six.
508. ELEMENTS OF NUMERICAL ANALYSIS (5). Pr., MH 264. The numerical solutions of selected problems arising in calculus and algebra along with the programming techniques.
581. FOUNDATIONS OF GROUP THEORY FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. Elements of the theory of groups emphasizing geometric and other examples.
582. FOUNDATIONS OF STATISTICS FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. Discrete probability distributions; introduction to statistical inference.
583. FOUNDATIONS OF LINEAR ALGEBRA FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. Matrix algebra, quadratic forms with emphasis on geometric interpretations in two and three dimensions.
584. FOUNDATIONS OF NUMBER THEORY FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. Divisibility, Diophantine equations, congruences.
585. FUNDAMENTALS OF ALGEBRA FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. Structure of the ring of integers; polynomial rings.
586. FOUNDATIONS OF NON-EUCLIDEAN GEOMETRY FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. B.L. geometry, hyperbolic geometry, absolute geometry, parallel postulates.
587. FUNDAMENTALS OF ANALYSIS FOR SECONDARY SCHOOL TEACHERS\* (4). Pr., one course above MH 163. Mathematical analysis with emphasis on basic principles and relationships. Students will develop the material from basic concepts.
- 588-589. CERTIFICATION MATHEMATICS FOR SECONDARY SCHOOL TEACHERS\* (5-5). Pr., undergraduate major in mathematics and departmental approval. Summer. For secondary school teachers who are working toward Class A certification. Topics will be selected from analysis, algebra and geometry according to the needs and interests of the students enrolled.

### **Mathematics — Algebra, Combinatorics and Analysis (MHC)**

Professors Wall, Head, Ebert, Govil, Henderson, Hill, Hoffman, Hudson, Johnson,  
Kallenberg, Lindner, Pate, Phelps, Rodger, Uhlig and Zalik

Alumni Professor Tierlinck

Associate Professors Albrecht, Kilgore, Leonard, Szulga and Veeh

Assistant Professors Goeters, Hankerson, Harris, Holmes, Jenda, Liao, Nakano

Nylen, Tam, Ullery and Zinner

Instructor Murphy

479. HONORS THESIS (3-6). Pr., Senior status and enrollment in Auburn University Honors Program. May be repeated once for maximum of six hours credit.
481. SPECIAL PROBLEMS (1-5). Pr., departmental approval, Junior standing. An individual problems course. Each student will work under the direction of a staff member on some problem of mutual interest.

### **ADVANCED UNDERGRADUATE AND GRADUATE**

500. MATHEMATICAL MODELING (5). Pr., MH 265, 269, or 528; an ability to program in FORTRAN. Introduction to mathematical models and related techniques. Course includes both general principles involving continuous and discrete deterministic problems and a detailed, specific term-project.
503. COMPLEX VARIABLES WITH APPLICATIONS I (5). Pr., MH 265 or 269. Complex functions and their elementary mapping properties; Cauchy-Goursat theorem; contour integration and residues; Laurent series; applications to real integrals. The sequence MHC 503-504 is appropriate for students of engineering or science.
504. COMPLEX VARIABLES WITH APPLICATIONS II (3). Pr., MHC 503. Linear fractional transformations; conformal mappings; harmonic functions; applications to boundary value problems; analytic continuation; entire functions. The sequence MHC 503-504 is appropriate for students of engineering or science.
505. MATRIX THEORY AND APPLICATIONS (5). Pr., MH 266 or 531. Canonical forms, determinants, linear equations, characteristic value problems.
- 507-508. INTRODUCTION TO APPLIED MATHEMATICS I, II (3-3). Pr., MH 265, 266 or equivalent. Special functions, orthogonal polynomials, integral equations, boundary value problems, Sturm-Liouville theory, systems of ordinary differential equations and elements of linear control theory, Lie groups, singular perturbations, boundary layers, Zeeman and Stark effects, classification of catastrophe sets, bifurcation of equilibrium states in one dimension, Hopf bifurcation, nonlinear oscillations.



- 509-510. INTRODUCTION TO APPROXIMATION THEORY I, II (4-4). Pr., MH 265 or departmental approval. The approximation of functions by polynomials, spline functions or trigonometric function, using techniques of interpolation or expansion in series. The sequence MHC 509-510 is appropriate for students of engineering and science.
512. INFORMATION THEORY (5). Pr., MH 264. Discrete probability, information and entropy, channel capacity, and optimal relative input frequencies, variable-length codes and data compression (the Kraft and McMillan inequalities, the Huffman algorithm), block codes and error correction, maximum likelihood decoding, Shannon's Noisy Channel Theorem.
513. ALGORITHMIC METHODS IN COMBINATORICS (5). Pr., MHC 575 or CSE 360 or COI. Basic algorithmic and computational methods used in the solution of fundamental combinatorial problems will be studied.
515. ALGEBRAIC CODING THEORY I (5). Pr., MH 266 or 337. Binary codes, linear codes, cyclic codes, Hamming codes, BCH codes; maximum likelihood decoding; error detection and correction; coset decoding.
516. ALGEBRAIC CODING THEORY II (5). Pr., MH 515. Theory of and implementable algorithms for codes of current practical and theoretical importance. Generalized BCH codes, Reed-Muller codes, Kerdock and Preparata codes, Reed-Solomon codes, quadratic residue codes, Justesen and concatenated codes, convolution codes.
518. CRYPTOGRAPHY (5). Pr., MH 332 or MHC 515 or COI. Classical cryptosystems, the Data Encryption Standard, the Rivest-Shamir-Adleman system and other public-key cryptosystems, trap-door functions, knapsack systems, factoring and primality testing, the discrete logarithm problem.
- 520-521-522. ANALYSIS I, II, III (5-5-5). Pr., MH 264. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integration, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.
530. THEORY OF DIFFERENCE EQUATIONS (3). Pr., MH 265 or 269, and 266 or 337, or COI. Linear difference equations, initial value problems, Green's functions, boundary value problems, asymptotic properties, Sturm-Liouville theory, systems, periodic solutions, stability, Lyapunov functions, nonlinear difference equations, models.
531. INTRODUCTION TO MODERN ALGEBRA III (5). Pr., MH 332. A continuation of MH 331-332.
533. RING AND FIELD THEORY (3). Pr., MH 334. A continuation of MH 334. Unique factorization domains, fields and field extensions, algebraic and transcendental extensions, algebraic closures, algebras.
534. GALOIS THEORY (3). Pr., MH 533. Solvable groups, automorphism groups, radical extension, normal extensions, separable extensions.
537. LINEAR ALGEBRA (5). Pr., MH 266 and 332. Linear transformations, matrix algebra, finite-dimensional vector spaces.
- 550-551. NUMERICAL MATRIX ANALYSIS I, II (3-3) Pr., MH 266 or 337 and the ability to program in an advanced level language. Direct and iterative methods for solving linear equations; error, conditioning and stability analysis; iterative and factorization techniques for the algebraic eigenvalue problem.
567. PROBABILITY THEORY (3). Pr., MH 264. An introduction to probability. Random variables, discrete and absolutely continuous distributions. The Poisson process. Expectation and conditional expectation. Moments and moment generating functions. Convergence and limiting distributions. Emphasis on problem solving.
568. MATHEMATICAL STATISTICS I (3). Pr., MH 567. An introduction to statistical methods. Estimation and maximum likelihood estimates. Sampling distributions, confidence intervals, hypothesis testing, the likelihood ratio test, sufficiency, completeness and Rao-Blackwell theorem.
569. MATHEMATICAL STATISTICS II (3). Pr., MH 568. Analysis of variance, regression and least squares. Sequential analysis. Bayesian estimation. Nonparametric methods.
571. LINEAR OPTIMIZATION (5). Pr., MH 266 or 337. Simplex algorithm and duality, shortest path, network flow, minimal cost flow, out-of-kilter method, assignment problems; matching; emphasis on both theory and algorithms for applied problems.
573. ENUMERATION (5). Pr., MH 264. Permutations and combinations, generating functions, inclusion-exclusion, cycles of permutations, occupancy, partitions, trees, Polya trees.
575. GRAPH THEORY (5). Pr., MH 266 or 337. Graph algorithms; matchings, edge-colorings, vertex-colorings and scheduling problems; Hamilton cycles and Euler tours; connectivity, spanning trees, disjoint paths and reliable networks; directed graphs, extremal graph theory; planar graphs.
577. COMBINATORIAL DESIGNS (5). Pr., MH 331. Latin squares, mutually orthogonal latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries.
581. TOPICS IN PROBABILITY AND STATISTICS (1-5). (May be repeated for credit). Pr., MH 567 or COI. A mathematical treatment of certain topics in probability and statistics. Topics will vary from year to year and will be chosen from the following: Applied stochastic process, time series, experimental design, sampling theory, non-parametric methods and others.
- 582-583-584. ACTUARIAL MATHEMATICS (3-3-3). Pr., MHC 567. A development of the mathematical theory of life insurances and annuities. The theory of pension funding and valuation. Modelling claims processes and analysis of the ruin problem.
585. ELEMENTARY STOCHASTIC PROCESSES (3). Pr., MHC 567. An introduction to stochastic processes such as Markov Chains and the Poisson Process.
598. SPECIAL TOPICS (1-5). Pr., COI. Topics may vary as needed. May be taken for credit more than once.

# Mathematics — Foundations, Analysis and Topology (MHT)

Professors Kozlowski, Head, J. Brown, B. Fitzpatrick, Gruenhage, Heath, Hetzer, Holmes, K. Kuperberg, W. Kuperberg, Minc, Rogers, Samson, Smith and Zenor  
Associate Professors Baldwin, Daniels, DeSouza, Ford, Hinrichsen, Slaminka, Transue and Young  
Assistant Professors Beaudoin, Butler, M. Fitzpatrick, Lin, Meir, Schmidt and Stuckwisch  
Instructors S.J. Brown and J.S. Rogers

479. HONORS THESIS (3-6). Pr., senior status and enrollment in Auburn University Honors Program. May be repeated once for maximum of six hours credit.
491. SPECIAL PROBLEMS (1-5). Pr., departmental approval, junior standing. An individual problems course. Each student will work under the direction of a staff member on some problem of mutual interest.

## ADVANCED UNDERGRADUATE AND GRADUATE

501. THE CALCULUS OF VECTOR FUNCTIONS (3). Pr., MH 266 or departmental approval. Derivative and integral of vector functions, gradient, divergence, curl, Green's Theorem, Stokes Theorem.
502. TENSOR ANALYSIS (3). Pr., MH 264 and MHT 501. The Frechet derivative; tensors and tensor valued functions; coordinate transformations; contravariant tensors; tangent spaces; differential forms; wedge products of forms; Einstein summation convention (raising and lowering indices); Riemannian metrics.
506. ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3). Pr., MH 362. First and second order linear partial differential equations with emphasis on the methods of eigenfunction expansions.
- 510-511. CALCULUS OF VARIATIONS I, II (3-3). Pr., MH 265 or 269. Fundamental concepts of extrema of functions and functionals; the simplest problem of the calculus of variations; first and second variations; generalizations of the simplest problem; sufficient conditions; constrained functionals; the general Lagrange problem; optimal control.
- 520-521-522. ANALYSIS I, II, III (5-5-5). Pr., MH 264. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integration, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.
524. FOURIER ANALYSIS (5). Pr., MHT 521 or MHC 521, an ability to program FORTRAN. Convergence and oscillation theorems for Fourier Series. Gibbs phenomenon. Fourier transform. Fast Fourier transform.
528. SYSTEMS OF DIFFERENTIAL EQUATIONS AND APPLICATIONS (5). Pr., MH 265 and 266 or equivalent. Linear systems of differential equations, stability, phase portraits; non-linear systems, linearization, qualitative properties of orbits, Poincare-Bendixson Theorem; numerical methods; applications to various disciplines.
- 538-539-540. INTERMEDIATE EUCLIDEAN GEOMETRY I-II-III (5-5-5). Pr., MH 163. An outline of the fundamental theorems and theorems of plane and solid Euclidean geometry with an introduction to higher dimensions. Regular polygons and polyhedra, symmetry groups, convexity, geometric extremum problems. Geometric transformations and their invariants.
- 541-542. GEOMETRY, A MODERN VIEW I, II (5-5). Pr., MH 163. A development of geometry using the real number system and measurement as proposed by G. D. Birkhoff. The course moves rapidly, with definitions and proofs, through the foundations of geometry and into the main body of geometric theory.
543. LINEAR GEOMETRY (5). Pr., MH 163. Transformations in projective, affine, and Euclidean planes.
544. COMBINATORIAL GEOMETRY IN THE PLANE (5). Pr., MH 163. Helly's and related theorems.
547. ONE-DIMENSIONAL DYNAMICAL SYSTEMS (3). Pr., MH 265 or COI. An introduction to dynamical systems with an emphasis on applications. The study of the logistic equation will motivate this course which will include the following topics; bifurcation theory, chaos, hyperbolicity, symbolic dynamics, Sarkovskii's theorem, maps of the circle, homoclinic points and the theory of kneading sequences.
548. MULTI-DIMENSIONAL DYNAMICAL SYSTEMS (3). Pr., MHT 547 or COI. MHT 548 will extend the results of MHT 547 to multi-dimensional systems and will describe in addition, the new phenomena that occur. Topics to be considered will be: the Lorenz map, strange attractors, the horseshoe map, toral automorphisms, stable and unstable manifolds, periodic points and the Henon map.
549. COMPLEX ANALYTIC DYNAMICAL SYSTEMS (3). Pr., MHT 548 or COI. Focuses on the dynamics of analytic mappings of the complex plane. Topics to be considered will be: quadratic maps, Julia sets, normal families and exceptional points, periodic sets and the exponential map.
550. INTRODUCTION TO TOPOLOGY (5). Pr., MHT 520 or MHC 520 or departmental approval. Metric spaces, topological spaces, continuity, compactness, connectedness, product and quotient spaces and local properties.
555. INTRODUCTION TO RECURSION THEORY (5). Pr., MH 371 or departmental approval. Partial recursive functions, recursive and recursively enumerable sets. Church's Thesis. Acceptable enumerations, Kleene's T-predicate, and the recursion theorem. The halting problem, the jump operation, and Turing degrees. Other recursively unsolvable problems.
563. INTRODUCTION TO NUMERICAL ANALYSIS I (5). Pr., MH 265 or 269 and an ability to program in a high level language. Numerical solution of equations in one variable, polynomial approximation, numerical differentiation and integration, numerical solutions of ordinary differential equations, error analysis. Students will be expected to write computer programs using the algorithms discussed.
564. INTRODUCTION TO NUMERICAL ANALYSIS II (5). Pr., MH 266 or 337 and an ability to program in a high level language. Direct and iterative numerical solutions of systems of linear equations, numerical computation of eigenvalues and eigenvectors, error analysis. Students will be expected to write computer programs using the algorithms discussed.

565. THEORY OF NONLINEAR OPTIMIZATION (5). Pr., MH 264 and 266, or equivalent. Kuhn-Tucker conditions, quadratic programming, search methods and gradient methods, Lagrangean and penalty function methods.
568. INTRODUCTION TO NUMERICAL ANALYSIS III (5). Pr., MHT 563 and 564 or departmental approval. Approximation theory, numerical solution of systems of non-linear equations, singular value decomposition and least-square problems, direct and indirect methods for sparse matrices.
579. EFFICIENT ALGORITHMS FOR COMPUTER PROGRAMS (3). Pr., knowledge of linear algebra and a computer language. The construction of serial and parallel algorithms to perform various tasks (sorting for instance) is studied using techniques such as recursion, tree search or divide-and-conquer and using numerous data structures such as heaps, queues, stacks, sets, binary trees and graphs. Of primary concern is the evaluation of the algorithm's efficiency by provably intractable problems (and how to recognize others) are also studied.
598. SPECIAL TOPICS (1-5). Pr., COI. Topics may vary as needed. May be taken for credit more than once.

## Mechanical Engineering (ME)

University Professor Crocker

Professors Goodling, Head, Beckett, Chin, Dyer, Jemian, E. Jones, Walker and Wilcox

Associate Professors Jang, Madsen, Raju, Siginer, Sinha Suhling, Thakur and Zee

Assistant Professors Baskin, Beale, Bhavnani, Flowers, P. Jones, Khodadadi,

Knight, Kowbel, Mackowski, Stern, Tippur and Wiens

General Curriculum, GLA, students (those with undeclared majors) may enroll only with departmental consent.

230. MECHANICS OF MATERIALS II (3). LEC. 2, LAB. 3. Pr., EGR 207. Normal and shear stresses in beams; beam deflections; pressure vessels: combined loading, failure criteria and superposition; buckling of columns.
235. DYNAMICS (3). Pr., EGR 205, CSE 120. Coreq., MH 265. Newtonian approach to the analysis of two-dimensional motion of particles and rigid bodies. Work-energy and impulse-momentum principles are applied to particle motion.
296. COMPUTATION LABORATORY (3). LEC. 2, LAB. 3. Pr., CSE 120, MH 163. Advanced computer programming with mechanical engineering applications including linear equations, non-linear equations, integration, curve fitting, differential equations and drafting.
304. THERMODYNAMICS II (3). Pr., EGR 201. Property relations and property determination, Maxwell's relations, thermodynamics of mixtures, combustion and chemical equilibrium.
311. ENERGY I (3). Pr., EGR 201. Thermodynamics of ideal and real power conversion cycles and devices, introduction to practical systems, availability analysis.
340. FLUID MECHANICS I (3). Pr., ME 296 or equivalent computer programming skills, EGR 201, ME 235. Coreq., EGR 207. Fluid properties; fluid statics; integral forms of mass conservation, linear momentum balance and angular momentum balance; applications to external and internal flows; fluid kinematics; differential form of mass conservation.
341. FLUID MECHANICS II (3). Pr., ME 340. Coreq., ME 304. Euler and Bernoulli equations; dimensional analysis and similitude; boundary layer concept; internal viscous flows; introduction to one-dimensional compressible flow.
370. DYNAMICS OF MACHINES (4). LEC. 3, LAB. 3. Pr., EGR 207, ME 296, 235. Theory and analysis of mechanical machines by kinematics and force analyses of mechanisms and assemblies of mechanisms.
397. MEASUREMENTS LABORATORY (2). LEC. 1, LAB. 3. Pr., ME 304, 341. Theory and practice of engineering measurements; treatment of experimental data, report writing, liquid and gaseous flow measurements, temperature, pressure, thermophysical properties.
411. THERMAL SYSTEMS LABORATORY (3). LEC. 2, LAB. 3. Pr., ME 397. Selected experiments on thermal systems evaluation.
421. HEAT TRANSFER I (3). Pr., EGR 201, EE 302, MH 265 or departmental approval. Fundamentals of heat transfer by steady and unsteady conduction and radiation.
422. HEAT TRANSFER II (3). Pr., ME 341, 421 or departmental approval. Fundamentals of heat transfer by free and forced convection, heat exchanger design.
454. INTRODUCTION TO DESIGN FOR MANUFACTURE (3). Pr., ME 480. Design methods and part specifications that impact on the ability to manufacture, assemble and service, and on the quality and cost of the product.
475. COMPUTER AIDED DESIGN (3). LEC. 2, LAB. 3. Pr., ME 480. Computer-aided design of mechanical systems and machine components. Introduction to finite element methods and optimization.
480. MECHANICAL ENGINEERING DESIGN I (4). LEC. 3, LAB. 3. Pr., ME 370, 230. Design of machine elements for static and dynamic stresses with the emphasis on synthesis and creative design.
481. MECHANICAL ENGINEERING DESIGN II (3). LEC. 2, LAB. 3. Pr., ME 480 or departmental approval, senior standing. The solution of typical engineering systems problems by group or team effort, requiring the development of skill and co-operation in the use of analysis, synthesis, creative design and optimization.
485. MANUFACTURING PROCESSES AND SYSTEMS (3). LEC. 3. Pr., ME 230. An introduction to manufacturing processes and systems with emphasis on fundamental principles and applications, process modelling and practical considerations and limitations.

490. UNDERGRADUATE SEMINAR (2). Pr., mechanical engineering students only. Attendance at a selection of departmental, college and university seminars and events. Intended to provide a broad perspective on a wide range of engineering issues. S-U grading only. May be repeated for up to six hours of credit.
491. DIRECTED READING IN MECHANICAL ENGINEERING (CREDIT TO BE ARRANGED). Pr., senior standing. A study in areas of current interest within mechanical engineering.
493. ADVANCED PROJECTS I (2). Coreq., ME 480 and senior standing. The primary objective is the selection and development of a plan for a design project to be completed in ME 494. Both individual and group projects are acceptable. Issues relating to the successful management of a project are addressed.
494. ADVANCED PROJECTS II (4). LEC. 1, LAB. 9. Pr., ME 493. Completion of individual or group design project culminating in a formal presentation or written report.
498. HONORS THESIS (1-6). Pr., COI and departmental approval. Individual student directed research and writing of honors thesis. (ME Honors Program students only. May be repeated once for a maximum of six total credit hours.)
499. INDIVIDUAL STUDY (CREDIT TO BE ARRANGED). Pr., senior standing. Individual study under the guidance of a faculty member.

### ADVANCED UNDERGRADUATE AND GRADUATE

511. ENERGY UTILIZATION (3). Pr., ME 422. Overview of energy sources and conversion systems, followed by energy auditing, efficiency improvements and design procedures for minimizing energy utilization in industrial settings.
512. POWER PLANT SYSTEMS (3). LEC. 2, LAB. 4. Pr., ME 304, 311, senior standing. Theory, design, performance and applications of power plant systems.
513. TURBOMACHINES (3). Pr., ME 341 or departmental approval. Applications of fluid mechanics to turbomachines, such as pumps, compressors, fluid couplings; control devices, steam turbines, gas turbine power plants.
516. INTERNAL COMBUSTION ENGINE DESIGN (3). Pr., ME 304, 311, 341 or departmental approval. Fundamentals of internal combustion engine (spark and compression ignited) design and analysis, emphasizing thermodynamic processes.
520. INTRODUCTION TO COMBUSTION (3). Pr., ME 311, 422 or departmental approval. Thermodynamics and chemical kinetics of combustion processes, ignition, characterization and combustion of gaseous, liquid and solid fuels; design of combustors, environmental aspects of combustion.
525. SOLAR ENERGY THERMAL SYSTEMS (3). Pr., ME 422. Review of heat transfer, extra-terrestrial and available solar radiation, transmission and absorption of radiation, design of flat plate collectors, concentrating collectors, energy storage, application of solar energy, active and passive systems, system calculations and economics.
526. HEAT EXCHANGER DESIGN (3). Pr., ME 422 or departmental approval. Fundamental, advanced and practical aspects of the design of heat exchangers for liquid and gas flow.
528. AIR CONDITIONING SYSTEMS (3). Pr., ME 311, 422. Theory and design of heating, ventilating and air conditioning systems.
529. REFRIGERATION AND HEAT PUMP SYSTEMS (3). Pr., ME 311, 422. Sizing and selecting refrigeration and heat pump components for specific applications, refrigerants and alternatives.
530. APPLIED ELASTICITY (3). Pr., ME 230. Equations of elasticity; applications to axially loaded bars and beams; general theory of torsion; axisymmetric problems; stress distributions near holes; curved beams, numerical solutions; design applications.
531. INTRODUCTION TO CONTINUUM MECHANICS (3). Pr., ME 230, 341. Introduction to cartesian tensor analysis. Kinematics of deformation and motion. Fundamental laws and field equations for a continuum. Elementary constitutive equations. Applications to solid mechanics, fluid mechanics and dynamics.
533. EXPERIMENTAL STRESS ANALYSIS (3). Pr., ME 230. Applied elasticity; electrical resistance strain gages and associated instrumentation; semiconductor strain gages; transducers; computer-aided data acquisition; uniaxial and torsion testing machines; brittle coatings; design applications.
534. PHOTOELASTIC STRESS AND STRAIN ANALYSIS (3). Pr., ME 230. Light, optics and polarization; polariscope theory; isoclinic and isochromatic fringe patterns; model materials and calibration; compensation techniques; dimensional analysis, stress separation; photoelastic coatings.
535. INTERMEDIATE DYNAMICS—NEWTONIAN (3). Pr., ME 296, 235. Newtonian approach to the analysis of three-dimensional motion of particles and rigid bodies.
536. INTERMEDIATE DYNAMICS—ENERGY METHODS (3). Pr., ME 235, 296. Introduction to variational methods in dynamics. Energy techniques including Lagrangian and Hamiltonian methods.
537. DYNAMICS OF ROTATING MACHINES (3). Pr., ME 235, 296. Issues involved in the design of high speed machinery. Balancing. Resonance.
538. INTRODUCTION TO ROBOTICS (3). Pr., ME 235, 296. Matrix methods in kinematics and kinetics. Applications to robots and human movement.
539. FINITE ELEMENT ANALYSIS (3). Pr., ME 230. Fundamentals of finite element analysis. Applications to the design of mechanical components.
540. INTERMEDIATE FLUID MECHANICS (3). Pr., ME 340 or ME 362. Navier-Stokes and Euler equations; stream functions; two-dimensional potential flows, complex variable methods; exact solutions to the Navier-Stokes equations; viscous flows; approximate solutions; mathematical techniques.
541. COMPRESSIBLE FLUID FLOW (3). Pr., ME 340 and EGR 201. Properties of ideal gases, general one-dimensional wave motion, isentropic flow with area change, normal shock waves, oblique shock waves, Prandtl-Meyer expansion waves, flow with friction (Fanno flow) and heat transfer (Rayleigh flow).

550. INDUSTRIAL NOISE AND VIBRATION CONTROL (3). Pr., ME 235 and 296. Sources of industrial noise; criteria for control, noise and vibration measuring instrumentation; issues involved in the design of machinery for minimum noise and vibration.
552. ENVIRONMENTAL NOISE CONTROL (3). Pr., ME 235 and 296. Definitions of noise and community noise descriptors, sources of community noise: aircraft, vehicles and industry. Noise reduction at the source and in the community. Community reaction to noise. Noise ordinances: local, state, federal and international. Noise regulations.
556. DESIGNING WITH FINITE ELEMENT ANALYSIS (3). Pr., ME 230. The finite element technique is applied to the design of mechanical systems. Applications include mechanical components and discrete systems, such as trusses and continuous systems.
557. DESIGN FOR THERMAL STRESSES (3). Pr., ME 480. Analysis and design of mechanical systems subjected to thermal loads.
560. MECHANICAL VIBRATION (3). Pr., ME 235, 296 and MH 362. Dynamics behavior of mechanical systems. Free and forced vibration of single and multi-degree of freedom systems. Matrix methods of analysis.
562. MODAL ANALYSIS IN DESIGN APPLICATIONS (4). LEC. 3, LAB. 3. Pr., ME 235, 296 and MH 362. Design and modification of mechanical systems for which vibration is a major concern. Emphasis on practical significance of results from modal analysis.
564. DYNAMICS OF PHYSICAL SYSTEMS (3). Pr., ME 235, 340, MH 362. Modelling of lumped systems; response of first and second order systems; frequency response techniques; stability and control.
566. AUTOMATIC CONTROLS (3). Pr., ME 341, 370. Control systems fundamentals. System analysis techniques. Applications to machine and process control.
- 566L. AUTOMATIC CONTROLS LABORATORY (1). LAB. 3. Pr., EE 301, 303, ME 566 (or concurrent). Application of control systems fundamentals. Experiments involving open- and closed-loop control systems.
575. COMPUTER AIDED MECHANICAL SYSTEM DESIGN (3). Pr., ME 370 and senior standing. Principles of kinematics, dynamics and simple numerical methods of analysis. Computer-aided response of simple and complex dynamic systems.
579. INTRODUCTION TO OPTIMAL SYSTEMS (3). Pr., senior standing. Application of optimal criteria to engineering problems.
591. DIRECTED READING IN MECHANICAL ENGINEERING (CREDIT TO BE ARRANGED). Pr., senior standing. Areas of current interest within mechanical engineering.
599. INDIVIDUAL STUDY (CREDIT TO BE ARRANGED). Pr., senior standing. Individual study under the guidance of a faculty member.

### **Military Science (MS)**

#### **GENERAL MILITARY COURSE**

##### (Basic Program)

##### **Military Science I**

101. THE U.S. ARMY TODAY (1). LEC, LAB. Overview of the United States Army and its role in American society. Lab provides practical experience in military training, leadership and rappelling.
102. CONTEMPORARY MILITARY ISSUES (1). LEC, LAB. An opportunity for students to research, analyze and discuss current issues involving the military. Lab provides practical experience in military training and leadership.
103. MODERN MILITARY WEAPONS AND OPERATIONS (1). LEC, LAB. In-depth instruction in the use of military weapons, tactics and operations by the United States Army and its allies as well as those used by the Communist Bloc nations. Lab provides practical experience in military training and leadership.
104. MOUNTAINEERING (2). LAB. 2.Pr., FR/SO only. Basic rappelling techniques. Requires a weekend field training exercise with climbing and rappelling at Cheaha Mountain State Park.
139. WILDERNESS SKILLS (2). LAB. 2. Pr., FR/SO only. Introduction to camping techniques in a woodland environment, emergency first aid procedures, shelter preparation, and food procurement.

##### **Military Science II**

201. MILITARY POWER AND NATIONAL SECURITY (1). LEC, LAB. Examines the purpose, structure, and function of the United States national security system vis-a-vis the Soviet national security system. Lab provides practical experience in military training and leadership.
202. MAP READING (1). LEC, LAB. Basic introduction into the military arts of map reading. Lab provides practical experience in military training and leadership.
203. LEADERSHIP AND MANAGEMENT (1). LEC, LAB. Basic introduction to the principles and techniques of leading and managing people, material and other resources. Lab provides practical experience in military training and leadership.

##### (Advanced Program)

##### **Military Science III**

301. LAND NAVIGATION TECHNIQUES (3). LEC. 3, LAB. Detailed map reading instruction. Includes a day and night land navigation practical exercise conducted at Ft. Benning, Ga.



## Music

302. **MILITARY TRAINING AND INSTRUCTION (3).** LEC. 3, LAB. Introduction to the U.S. Army's Training Management System. Applied practical exercises in planning, coordinating, and executing military training. Conduct of a live-fire M16A1 rifle practical exercise at Ft. Benning, Ga.
303. **MILITARY QUALIFICATION SKILLS (3).** LEC. 3, LAB. Hands-on military training in the basic skills common to all junior officers. Culminates with a weekend practical skills application exercise at Ft. Benning, Ga.
305. **RANGER OPERATIONS AND TACTICS (2).** LAB 2. Basic Ranger Operations to include patrolling, airmobile operations, mountaineering, light infantry weapons, and land navigation. Frequent field training exercises will be conducted (at least two per quarter).

### Military Science IV

401. **MILITARY JUSTICE AND ETHICS (3).** LEC. 3, LAB. Introduction to the Military Justice System and the military ethic.
402. **ADVANCED LEADERSHIP AND MANAGEMENT (3).** LEC. 3, LAB. Intermediate instruction in the principles and techniques leadership and management.
403. **ADVANCED MILITARY LEADERSHIP AND MANAGEMENT II (3).** LEC. 3, LAB. Comprehensive instruction in the principles of small unit leadership and management.
404. **LEADERSHIP LAB (0).** LAB. 2. Required for advanced ROTC cadets not enrolled in ROTC courses during a quarter due to leave of absence or completion of all commissioning requirements.

## Music (MU)

Professors Moore, Rosenbaum, Smith and Vinson

Associate Professors Kafer, Head, Faust, C. Gossett, Greenleaf, Howard,  
Morgan, Richardson, Stephenson, Summerville, Alexander, Garrison and Knipschild

Assistant Professor Wylie

Instructor S. Gossett

Artist-in-Residence Voketaitis

(T) indicates courses taught primarily for music education students.

020. **SOPHOMORE COMPREHENSIVE EXAMINATION (0).** Pr., MU 232. Evaluation of overall musical progress at the end of the sophomore year in written and oral form.
040. **SENIOR PROJECT (0).** Demonstration of professional level of achievement in the student's given major area.
100. **PERFORMANCE ATTENDANCE (0).** All quarters. Required of all music students each quarter. Performance and lectures by faculty, guest artists and students. Music and music education majors are expected to perform at the teacher's discretion and in accordance with departmental rules.
- 131-132-133. **MATERIALS AND ORGANIZATION OF MUSIC (5-5-5).** A systematic study of harmony, counterpoint, form and style through the literature of music.
- 154-155-156. **MUSIC COMPOSITION (1-1-1).** Pr., concurrent enrollment in MU 131-132-133. The creative use of basic constructional materials in structured contexts.
- 201-202-203. **JAZZ PIANO (1-1-1).** Idiomatic harmonic and melodic exercises and their application to the jazz literature, including standard tunes and improvisational situations.
- 204-205-206. **FUNCTIONAL PIANO (1-1-1).** Pr., MUA 184/187. Development of functional piano skills for use in classroom, rehearsal or studio.
- 211-212. **SERVICE PLAYING (1).** Hymn playing, modulation, selected anthems and oratorio selections, simple improvisation and transposition.
- 231-232-233. **MATERIALS & ORGANIZATION OF MUSIC (5-5-5).** Pr., MU 133. Continuation of harmony, counterpoint, form and style in music.
- 251-252-253. **SURVEY OF MUSIC LITERATURE (1-1-1).** LEC. AND LAB. 3-3-3. Presentation of instrumental solo, opera and symphonic music, acquainting the student with musical compositions and composers with emphasis on music literature of the past three centuries.
- 254-255-256. **MUSIC COMPOSITION (1-1-1).** Pr., concurrent enrollment in MU 231-232-233. The creative use of developmental material and sections of standard forms in structured contexts.
300. **INTRODUCTION TO ELECTRONIC MUSIC (3).** Pr., COI. An introduction to the literature of and study of the basic production techniques of electronic music.
311. **LITURGIES (3).** Liturgical worship service of Roman Catholic and Protestant churches, plus non-liturgical forms of other Protestant denominations.
312. **HYMNOLOGY (3).** The musical significance of hymns of the Christian church from the earliest times to the present.
- 331-332-333. **MATERIALS AND ORGANIZATION OF MUSIC (3-3-3).** Pr., MU 233. Continuation of second year systematic study of harmony, counterpoint, form and style through the literature of music.
- 334-335-336. **MUSIC COMPOSITION I, II, III (1-1-1).** Pr., MU 233. Creative experience of various techniques in smaller design and apparatus.
- 337-338-339. **MODERN HARMONY I, II, III (3-3-3).** Pr., MU 233. 20th century harmonic devices. An integrated approach to understanding contemporary writing with emphasis on original work and analysis of the principal departments from "traditional" harmony.

- 341-342-343. JAZZ, IN THEORY AND PRACTICE (3-3-3). Pr., MU 233 or COI. The application of traditional theoretical concepts and skills to the jazz literature.
- 344-345-346. JAZZ REPERTOIRE (3-3-3). Pr., MU 203. Harmonic and formal analysis of standard jazz literature, with emphasis on reharmonization and variation, leading to the development of a professional level repertoire.
- 351-352-353. MUSIC HISTORY I, II, III (3-3-3). Pr., MU 133. Development of music from early times to the present day. Lectures, recorded examples, readings.
- 361-362-363. CONDUCTING I, II, III (2-2-2). Pr., MU 133. (I). Basic conducting technique and introduction to score reading. (II). Advanced conducting technique, score reading, and interpretation with specialization in either choral or instrumental areas. (III). Advanced conducting techniques and score reading with opportunity for practical experience in preparing choral groups and instrumental groups for performance.
371. INTRODUCTION TO MUSIC (3). Open to Elementary Education and Family and Child Development Majors only. The understanding of music including an explanation of basic terms, notations, rhythm, tonal system, vocal and piano score readings.
- 409T. MARCHING BAND TECHNIQUES (3). Fundamental methods and procedures of the marching band.
- 410T. ORCHESTRAL TECHNIQUES (3). Pr., junior standing. Methods and procedures of rehearsing the orchestras in areas of articulation, tone production, blend, balance, intonation, and musical expression.
- 411T. CHORAL TECHNIQUES (3). Pr., junior standing. Methods and procedures of rehearsing choral groups in areas of diction, tone production, blend, balance, intonation and musical expression.
414. CARE AND REPAIR OF MUSICAL INSTRUMENTS (1). LEC. 1, LAB. 3. Pr., senior standing. Selection, care and repair of woodwind, brass and string instruments with emphasis on adjustments which should be made by the instrumental director.
415. ORGAN LITERATURE AND DESIGN (3). Survey of organ literature correlating the forms of compositions and types of organs for which the music was written.
416. CHURCH MUSIC SEMINAR (3). Pr., MU 311, 312, 361, 362, 415, or 422, or COI. The processes of establishing a complete church music program. Supervised directing of choral ensemble.
- 434-435-436. MUSIC COMPOSITION I, II, III (3-3-3). Pr., 233. Analysis, study and writing of musical compositions in small, compound and larger musical forms with emphasis on both stylistic and individual creative writing.
- 437-438-439. JAZZ IMPROVISATION (3-3-3). Pr., MU 346. Practical, supervised performing experiences, with opportunity for practical experience with university and professional ensembles.
- 442T. VOCAL PEDAGOGY (3). For prospective voice teachers. An intensive study of the materials and methods of voice training. Classification and analysis of teaching repertoire.
- 443T. STRING PEDAGOGY (3). Mechanics of stringed instruments. Teaching methods, schools, and systems. Teaching literature and repertoire. For either violin, viola, cello, string bass or harp.
- 444T. INSTRUMENTAL PEDAGOGY (3). Mechanics of brass or woodwind instruments. Teaching methods and repertoire with emphasis on solo instrumental literature.
445. THEORY PEDAGOGY (3). Required of seniors majoring in theory and composition. Designed to present the problems of sight-singing, rhythmic dictation, melodic and harmonic dictation, and part writing from a pedagogical viewpoint.
- 447-448-449. PIANO PEDAGOGY (3-3-3). For prospective piano teachers. Teaching methods for beginners in private and group instruction. The intermediate and advanced student. Analysis of teaching repertory. Observation and practical experience.
452. VOCAL LITERATURE (3). Pr., junior standing. Vocal literature from Elizabethan time to the present, including representative European and American repertoire.
454. INSTRUMENTAL LITERATURE (3). Pr., junior standing. The literature of the major performance area.
455. OPERA LITERATURE (3). Pr., junior standing. Vocal music of the opera from the Baroque to the present time.
- 457-458-459. KEYBOARD LITERATURE (1-1-1). Pr., junior standing. Masterwork for keyboard from the Baroque Period to the present. Restricted to piano pedagogy majors only.
461. ANALYSIS OF JAZZ MASTERWORKS (3). Pr., MU 346. Recorded performances by important performers and composers, including compositional and stylistic analysis and the transcription of improvisational solos.
- 462-463. JAZZ COMPOSING AND ARRANGING (3-3). Pr., MU 346. Emphasis on original work, and the arranging of existing material for large and combo instrumental ensembles and for vocal ensembles.
- 471-472-473. PIANO SKILLS AND TEAM TEACHING (PRACTICUM) (2). Discussion of piano skills as they are taught through student literature. Supervised individual, and team teaching and observation of identified excellent teachers of pre-college students.
477. INSTRUMENTAL ARRANGING (3). Pr., MU 233 or COI. Project course in arranging various instrumental combinations from quartet to symphonic band.
478. CHORAL ARRANGING (3). Pr., MU 233 or COI. Project course in arranging for various combinations.

## ADVANCED UNDERGRADUATE AND GRADUATE

- 522-523-524. THEORY REVIEW (3-3-3). No credit for Applied Theory Composition or Pedagogy majors. Harmonic techniques of the 18th and 19th centuries, with special emphasis on style and design.
- 537-538-539. ORCHESTRATION I, II, III (3-3-3). Pr., MU 233. Ranges, notation, and characteristics of orchestral instruments. Exercises in arranging for combinations of string and wind instruments. Theory and practice of orchestration for full orchestra.
553. CHORAL LITERATURE (3). Pr., junior standing. Chronological study of choral music from the Middle Ages to the present including opera, and oratorio with detailed examination of representative works.

554. HISTORY AND LITERATURE OF THE WIND BAND (3). Pr., Junior standing. History of development of the wind band and its literature from ca. 1500 to the present.

### GENERAL ELECTIVE COURSES

130. FUNDAMENTALS OF MUSIC (3). Music primarily to develop functional piano skills, sight-reading, rhythm and melodic skills, and the basics of musical construction (scales, intervals, keys, and triads).
372. HISTORY OF JAZZ (3). The growth of Jazz from its African and European roots to current experimentation.
373. APPRECIATION OF MUSIC (3). May not be taken for credit by Music majors or minors. Outstanding composers and compositions. No previous music training required; an orientation in the art of listening.
374. MASTERPIECES OF MUSIC (3). May not be taken for credit by Music majors or minors. Representative musical works of each great period of musical history. No previous music training required.

### GROUP PERFORMANCE COURSES

- 121-122-123. UNIVERSITY SINGERS (1 HOUR CREDIT PER QUARTER). May be taken with or without credit. A select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Open to any Auburn student by audition only.
- 124-125-126. CONCERT BAND (1 HOUR CREDIT PER QUARTER). Members of the Band are selected during the first week of each quarter. A minimum of four rehearsal hours per week is required, with extra rehearsals scheduled as necessary. Band members are required to be present at all rehearsals and all public performances. Students enrolled in Concert Band will have the drill portion of Basic Military Training waived. (May be taken with or without credit.)
- 127-128-129. ORCHESTRA (1 HOUR CREDIT PER QUARTER). Members of the symphonic orchestra are selected by try-outs during the first week of each quarter. (May be taken with or without credit.)
134. JAZZ LABORATORY BAND (1). A musical ensemble for the study and performance of music relating to the jazz idiom. By audition only.
- 141-142-143. GOSPEL CHOIR (1-1-1). Open to any Auburn student by consent of director. (May be taken with or without credit.)
- 218-219-220. WOMEN'S CHORUS (1-1-1). Open to any Auburn female student by consent of choral director. (May be taken with or without credit.)
- 221-222-223. MEN'S CHORUS (1-1-1). Open to any male Auburn student by consent of choral director. (May be taken with or without credit.)
224. MARCHING BAND (1 HOUR CREDIT PER QUARTER). Fall Quarter only. Provides music for athletic contests and half-time shows at football games, various parades, pep rallies, and other campus and off-campus events. During the fall quarter, will rehearse a minimum of six hours per week. Physical Education may be waived for members of the marching band. In addition, students will have the drill portion of basic military waived when enrolled in Marching Band. See band director for details. (May be taken with or without credit.)
- 227-228-229. OPERA WORKSHOP (1 HOUR CREDIT PER QUARTER). Open to all students interested in opera, including performance, stage-craft, make-up, conducting and coaching. A minimum of three hours per week rehearsal or stage-craft is required with extra time scheduled as necessary. (May be taken with or without credit.)
- 321-322-323. CONCERT CHOIR (1 HOUR CREDIT PER QUARTER). Concert choir is a mixed chorus for study and performance of serious choral literature; open to any Auburn student by audition only. (May be taken with or without credit.)
- 324-325-326. MUSIC ENSEMBLE (1 HOUR CREDIT PER QUARTER). COI. Primarily for advanced musicians for the study and performance of musical compositions for small instrumental and vocal groups. A minimum rehearsal of three hours per week required. (May be taken with or without credit.) Includes brass, woodwind, percussion and piano ensembles.
327. PIANO ENSEMBLE (1 HOUR CREDIT PER QUARTER). Study through performance of the ensemble literature for keyboard. May be repeated for credit.
- 424-425-426. MUSIC ENSEMBLE (1). Pr., COI. Primarily for advanced musicians for the study and performance of musical compositions for small instrumental and vocal groups. A minimum rehearsal of three hours per week required. (May be taken with or without credit). Includes brass, woodwind, percussion, and piano ensembles.

### PERFORMANCE

Individual instruction is available in voice, piano, organ, strings, woodwinds, harp, brass and percussion. One 1-hour lesson or two half-hour lessons per week. Students desiring study in performance must be approved by the head of the Department of Music before entrance into the course.

080. PERFORMANCE (0). May be repeated. Individual instruction in instrumental or vocal areas. Rudimentary practice as related to each discipline.
181. PERFORMANCE (3). Individual instruction in instrumental or vocal areas for performance, church music majors only. May be repeated.
184. PERFORMANCE (1). Individual instruction in instrumental or vocal areas. For piano pedagogy, theory/composition, bachelor of arts majors, and music education minors. May be repeated.
187. PERFORMANCE (1). Individual instruction in instrumental or vocal areas. For students in elementary and secondary education, and performance minors and electives. May be repeated.

381. PERFORMANCE (3). Pr., six quarters of MUA 181. Individual instruction in instrumental or vocal areas. Performance and Church majors only. May be repeated.
384. PERFORMANCE (1). Pr., six quarters of MUA 184. Individual instruction in instrumental or vocal areas. For piano pedagogy, theory/composition, bachelor of arts majors, and music education minors. May be repeated.
387. PERFORMANCE (1). Pr., six quarters of MUA 187. Individual instruction in instrumental or vocal areas. For students in elementary and secondary education and performance minors and electives. May be repeated.
860. PERFORMANCE (3-3-3).

The amount of credit in Performance study is based on the following practice schedule:

1 cr. hr. — 5 hours weekly practice.

3 cr. hrs. — 15 hours weekly practice.

#### Individual Instruction Fees Per Course (Per Quarter) . . . \$45.00

This additional fee to be paid at the time of registering for each Performance Course of individual instruction. Instruction is available in one hour or two half-hour lessons per week.

### CLASS INSTRUCTION IN PERFORMANCE

The Music Department offers a number of classes in Performance open to Music Majors and Minors and to regularly registered college students who have had previous music training. These classes meet two hours per week and carry one hour credit.

- 101-102-103T. GUITAR CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to the guitar.
- 104-105-106. PIANO CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to piano playing.
- 107-108-109. VOICE CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to voice.
- 110-111-112T. STRING INSTRUMENTS CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to violin, viola, cello and contrabass playing.
- 113-114-115T. BRASS INSTRUMENTS CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to trumpet, trombone and other brass instruments.
- 116-117-118T. WOODWIND INSTRUMENTS CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to clarinet, oboe, bassoon, flute and other woodwind instruments.
- 119T. PERCUSSION INSTRUMENTS CLASS (1). (2 LAB.). Class instruction and practice in the rudiments of music as applied to playing the snare drum.
- 120T. ADVANCED PERCUSSION INSTRUMENTS CLASS (1). LEC. 2, LAB. Pr., MU 119T or COI. Class instruction and practice in the rudiments of music as applied to playing timpani, the keyboard mallet instruments and the other miscellaneous percussion instruments.

### ADVANCED UNDERGRADUATE AND GRADUATE

- 522-523-524. THEORY REVIEW (3-3-3). Pr., senior standing and departmental approval. No credit for Applied, Theory-Composition or Pedagogy majors. A review of the harmonic techniques of the 18th and 19th centuries with special emphasis on style and design.

### Naval Science (NS)

111. INTRODUCTION TO NAVAL SCIENCE (1). LEC. 2, LAB. 2. Fall. Introduction to basic areas of Naval Science including such subjects as uniforms and insignia, military courtesy, discipline, components and supporting elements of the Navy, logistics, communications, security, Naval Intelligence and oceanographic research.
- 112-113. NAVAL SHIPS SYSTEMS I-II (2-2). LEC. 2, LAB. 2. I Winter, II Spring. Principles of ship design, construction and stability. Study of impaired stability and damage control. Shipboard auxiliary systems, basic electricity, introduction to thermodynamics and steam cycle as applied to naval propulsion systems. Advanced propulsion and ship design including nuclear and gas turbine engines.
- 211-212. NAVAL WEAPONS I-II (2-2). LEC. 3, LAB. 2. I Fall, II Winter. Introduction to weapons systems through a study of fundamental principles of sensor, tracking, computational, and weapons delivery subsystems in addition to the practical application of various systems.
213. SEAPOWERS AND MARITIME AFFAIRS (2). LEC. 3, LAB. 2. Spring. A seminar course dealing with broad principles, concepts and elements of seapower and maritime affairs with application to the United States and other world powers.
- 311-312. NAVIGATION I & II (3-3). LEC. 4, LAB. 2. I Fall, II Winter. The theory and principles of piloting involving the use of visual and electronic aids. The theory, principles, and procedures of celestial navigation.
313. NAVAL OPERATIONS (3). LEC. 4, LAB. 2. Spring. Navy tactical formations and dispositions, relative motion, Rules of the Road, maneuvering board and communications.
- 321-322-323. EVOLUTION OF WARFARE (3-3-3). LEC. 3, LAB. 2. Fall, Winter, Spring. Forms of warfare practices to identify historical continuity and change in the evolution of warfare. Demonstrates concepts of strategy; examines great captains and military organizations of history to discover ingredients of their success. Explores the impact of historical precedent, economic factors and technological change on politico-military thought and action.

- 411-412-413. PRINCIPLES OF NAVAL ORGANIZATION LEADERSHIP AND MANAGEMENT. (3-3-3). LEC. 3, LAB. 2. Fall, Winter, Spring. Various tools and methods of leadership. The Uniform Code of Military Justice from the division officer's perspective. Naval personnel administration, material management, and correspondence.
- 421-422-423. AMPHIBIOUS WARFARE (3-3-3). LEC. 3, LAB. 2. Fall, Winter, Spring. Amphibious warfare prior to WWII through Grenada; definitions of concept, examination of doctrinal origins, evolution of amphibious warfare tactics and techniques, and the current structure of the Fleet Marine Force and its equipment.

## Nursing (NUR)

101. ORIENTATION TO NURSING (2). Fall. An introduction to the discipline of nursing as a career.
302. DIMENSIONS OF PROFESSIONAL NURSING (2). Pr., admission to the Professional Nursing Program. Fall. Conceptual and theoretical foundations for nursing are presented. Introduces the concept of professionalism as essential to the discipline of nursing.
303. HEALTH ASSESSMENT ACROSS THE LIFE SPAN (4). LEC. 3, LAB. 2. Fall. Pr., admission to the Professional Nursing Program. Designed to prepare students to perform comprehensive health assessment on individuals across the life span.
305. BIOMEDICAL INSTRUMENTATION (2). Pr., NUR 302, 303, 310, ZY 440. Winter. Basic concepts necessary for utilization of biomedical devices in the implementation of nursing care.
310. NURSING CONCEPTS I (8). LEC. 4, LAB. 8. Pr., admission to the Professional Nursing Program. Fall. Concepts and theories basic to the art and science of nursing. Emphasizes the nursing process as the basis for nursing decision-making.
311. NURSING CONCEPTS II (12). LEC. 5, LAB. 14. Pr., NUR 302, 303, 310, ZY 440. Winter. Concepts, theories and clinical experiences related to assisting individuals and families to adapt to selected health alterations across the life span.
312. NURSING CONCEPTS III (12). LEC. 5, LAB. 14. Pr., NUR 305, 311, ZY 441. Spring. Continuation of concepts, theories and clinical experiences related to assisting individuals and families to adapt to selected health alterations across the life span.
313. PSYCHIATRIC/MENTAL HEALTH NURSING (7). LEC. 3, LAB. 8. Pr., NUR 305, 311, ZY 441. Spring. Emphasizes nursing interventions to facilitate successful psychosocial adaptations for individuals and groups. Stressors that result in psychosocial impairments are examined.
396. HUMAN SEXUALITY IN HEALTH AND ILLNESS (3). Pr., junior standing, open to all University students. Explores human sexuality in relation to the health continuum. Opportunity to view sexuality across the life span.
401. TRANSITION INTO PROFESSIONAL NURSING (6). LEC. 4, LAB. 4. Pr., successful completion of NLN Mobility II exams and acceptance into the EARN Program. Summer. Designed as a bridge course for registered nurse students only. Facilitates the transition from diploma/associate degree nursing to professional practice.
420. PRINCIPLES OF EPIDEMIOLOGY AND DISEASE SURVEILLANCE (4). Concepts, principles and methods generally used in surveillance and investigation of communicable disease in hospitals and communities.
422. FAMILY AND COMMUNITY HEALTH NURSING (12). LEC. 4, LAB. 16. Pr., successful completion of junior-level nursing courses. Fall, Winter. Emphasizes health promotion and maintenance, illness care and rehabilitation of families and groups in community settings.
432. NURSING RESEARCH (3). Pr., successful completion of junior-level nursing courses. Fall. Explores the research process as a systematic means for contributing to nursing knowledge. Emphasis is on the use of research knowledge in providing nursing care for individuals, families and groups.
435. INFORMATION MANAGEMENT IN NURSING (3). LEC. 2, LAB. 2. Pr., successful completion of junior-level nursing courses. Winter. Theory and practice related to information management systems and their applicability to health care delivery and research.
450. SENIOR SEMINAR (3). Pr., NUR 422, 432, 435, 460, 495. Spring. Emphasizes role socialization essential for entry to the practice of professional nursing. Issues and stressors in professional practice are explored.
460. NURSING CONCEPTS IV (12). LEC. 4, LAB. 16. Pr. Successful completion of junior-level courses. Fall, Winter. Promotes a holistic approach to the care of clients experiencing multisystem stress as a result of crisis across the life span. Focus is on the clinical roles and responsibilities of the professional nurse in selected specialty areas.
471. HONORS THESIS (1-6). Open to persons in the University Honors Program and with consent of the student's Honors advisor.
490. DIRECTED INDEPENDENT STUDY (1-6). Pr., NUR 310. May be repeated to a maximum of six hours credit. Directed readings and/or clinical study in student-selected areas related to nursing.
495. MANAGEMENT IN NURSING (3). Pr., successful completion of junior-level courses. Fall. The leadership component of the professional nursing role is discussed. Concepts and theories related to leadership and management are presented for assimilation into practice.
499. SENIOR PRACTICUM (15). LEC. 1, LAB. 28. Pr., NUR 422, 432, 435, 460, 495. Spring. Provides clinical learning opportunities which enable students to synthesize theoretical and empirical knowledge from nursing and the scientific and humanistic disciplines in preparation for assuming the professional nurse role.

## ADVANCED UNDERGRADUATE AND GRADUATE

501. PATHOPHYSIOLOGY OF POTENTIALLY HANDICAPPING CONDITIONS IN YOUNG CHILDREN (3). Designed for students pursuing careers in health related fields or other professions that provide services to handicapped children. Handicapping conditions of infants, their treatment and implications are explored.



## Nutrition and Food Science (NFS)

Professor Winterfeldt, Acting Head

Associate Professors Clark, Craig-Schmidt, Crayton, Keith, Kent and Struempier

Assistant Professors Chesnutt, Fellers, Gropper, Mikel, Olds and Svacha

200. NUTRITION AND HEALTH (3). Principles of human nutrition and food choices related to the health of individuals.
201. INTRODUCTORY FOOD SCIENCE AND TECHNOLOGY (3). Principles of major food processing methods, concepts of food quality, nutrition, sanitation, safety of food additives and food laws. Overview of careers in food science and food technology.
202. PRINCIPLES OF FOOD PREPARATION (5). LEC. 3, LAB. 4. Pr., CH 103 or BI 105. Basic chemical and biological principles underlying the fundamental processes and standards of food preparation.
204. FOOD MANAGEMENT FOR THE CONSUMER (5). LEC. 4, LAB. 3. Pr., NFS 200, 202, AEC 210 or CSE 100. Management of individual and family resources in the selection of food. Emphasis placed on food patterns, nutritional needs, cost control, time and energy conservation and the food marketing system.
206. FOOD AND HEALTH (3). LEC. 2, LAB. 3. Selection and preparation of basic foods with an introduction to meal planning to meet daily nutritional needs and time-money budgetary constraints. Not open to majors in Nutrition and Food Science (NFS, HRM) or Vocational Home Economics.
304. QUANTITY FOOD PREPARATION (5). LEC. 3, LAB. 4. Pr., junior standing and NFS 202. Principles of preparing and serving food in the institutional setting. Laboratory experience in university food services.
307. SURVEY OF DIETETICS (2). LEC. 1, CLINICAL EXPERIENCE 3. Pr., junior standing. Role and professional conduct of dietitians in various institutions. Open to students in Nutrition and Food Science (Plan V/Dietetics option) major.
312. CHILD NUTRITION (3). LEC. 2, LAB. 2. Pr., NFS 200. Application of nutrition in the development of the child from conception through adolescence.
318. NUTRITIONAL BIOCHEMISTRY (4). Pr., CH 203. Chemistry of carbohydrates, fats, proteins, vitamins and minerals applied to human nutrition.
- 318L. NUTRITIONAL BIOCHEMISTRY LABORATORY (1). LAB. 3. Pr., CH 203. Coreq., NFS 318 for majors in NFS. Application of laboratory techniques and instrumentation in measuring nutrients in biological materials.
324. FOOD PRESERVATION (3). LEC. 2, LAB. 3. Pr., NFS 202, MB 300 or COI. Food spoilage mechanisms and their prevention.
346. FOOD SERVICE ORGANIZATION AND MANAGEMENT (5). Pr., NFS 304, MN 310. Management principles, methods of control and personnel management related to quantity food service operations.
- 346L. FOOD SERVICE ORGANIZATION AND MANAGEMENT PRACTICUM (1). LAB. 3. Pr., NFS 304, MN 310. Taken concurrently with NFS 346. Utilizes the concepts and principles of management that relate to institutional food organization and management.
358. COMMUNITY AND FAMILY HEALTH (3). LEC. 2, LAB. 2. Facilities, services and agencies within the community which affect health. Field trips.
362. COMMUNITY NUTRITION (4). LEC. 3, LAB. 2. Pr., NFS 200 and 318 or equivalents. Assessment of community nutritional status and methods used to affect change.
372. FUNDAMENTALS OF NUTRITION (3). Pr., CH 203, BI 101. Principles of human nutrition and factors influencing nutrient requirements.
382. PRINCIPLES OF NORMAL NUTRITION I (5). LEC. 3, LAB. 4. Pr., NFS 318 or equivalent. Physiological and biochemical bases of nutrient needs of the healthy individual. Methods of assessing nutritional adequacy of the diet.
392. PRINCIPLES OF NORMAL NUTRITION II (5). LEC. 3, LAB. 4. Pr., NFS 382. Continuation of NFS 382.
408. INDEPENDENT OR FIELD STUDY (3-8). Laboratory or field experiences approved and supervised by a faculty member. May be repeated for a maximum of eight credit hours.
429. SEMINAR IN NUTRITION AND FOOD SCIENCE (1). Pr., senior standing. Lectures, demonstrations and literature reviews by staff, students and guest lecturers.

## ADVANCED UNDERGRADUATE AND GRADUATE

502. DIET THERAPY (5). LEC. 4, LAB. 2. Pr., NFS 392. Application of principles of nutrition to various periods of stress and as a therapeutic aid in treatment of disease.
543. FOOD CHEMISTRY (5). LEC. 3, LAB. 4. Pr., CH 207, NFS 318. The chemistry of the important components of foods and changes occurring during processing, storage and handling.
545. FOOD ANALYSIS AND QUALITY CONTROL (5). LEC. 3, LAB. 4. Pr., NFS 543. Sensory, chemical and instrumental food analysis and its application to quality control and evaluation of grades and standards.
562. NUTRITION AND PHYSICAL PERFORMANCE (5). Pr., ZY 251, NFS 318 or equivalent and junior standing. The effects of nutrition on human physical performance and athletic ability.
564. EXPERIMENTAL FOODS (5). LEC. 2, LAB. 6. Pr., NFS 202, CH 203. Effects of variation of ingredients and treatments on quality characteristics of foods.
574. ADVANCED DIET THERAPY (3). Pr., NFS 502. Continuation of application of principles of nutrition in treatment of disease.
577. FOOD PLANT SANITATION (4). LEC. 3, LAB. 2. Pr., MB 201 or 300 or COI. Sanitary regulation of food plants. Hazards in the food system and their elimination. Quality assurance.

578. MODERN VIEWS OF NUTRITION AND FOOD SCIENCE (3). Pr., satisfactory course in nutrition and food science. Current concepts in nutrition and food science and related fields.
582. TEACHING NUTRITION TO CHILDREN IN SCHOOLS (3). Pr., one nutrition course and junior standing. Methods for teaching nutrition principles and motivating changes in food habit of students in grades K-12. Focuses on nutrition education research as well as specific activities and objectives for various age groups.
588. INTERNATIONAL NUTRITION AND FOOD SCIENCE (3). Pr., satisfactory course in nutrition and food science. Nutritional status of world population and local, national and international programs for improvement.
592. NUTRITION IN THE LIFE CYCLE (5). Lec. 4, Lab. 2. Pr., NFS 392 and junior standing. Metabolic and clinical approach to nutrition throughout the life cycle with emphasis on groups for whom nutrition is more crucial.

### HOTEL AND RESTAURANT MANAGEMENT (HRM)

101. INTRODUCTION TO HOSPITALITY MANAGEMENT (2). Overview of the hotel, restaurant, club and travel fields and how their components interact.
320. HOSPITALITY FINANCIAL MANAGEMENT (4). Pr., AC 211, 212, HRM 101. Financial systems and statements in the hospitality industry.
330. HOSPITALITY LAW (4). Pr., HRM 101, MT 255. Laws and litigation that pertain to and impact the operation of hotels, restaurants and clubs.
340. HOSPITALITY MARKETING (3). Pr., HRM 101, MT 331. Marketing techniques and issues applicable to the hotel and restaurant environments.
410. RESTAURANT MANAGEMENT (4). Pr., NF 200, 202, ADS 270, HRM 320, 330, 340. Managerial aspects of successful restaurant operations.
446. CATERING (3). Lec. 2, Lab. 3. Pr., HRM 410. Types of catered food service functions: planning, pricing, organization, management, equipment and service.
450. HOTEL MANAGEMENT (4). Pr., HRM 320, 330, 340. Management of the rooms division, food and beverage departments and other profit centers.
455. CLUB MANAGEMENT (3). Pr., HRM 410. Operational and career issues pertaining to the club environment.
460. ADVANCED SERVICE MANAGEMENT (4). Pr., HRM 410, 450. Characteristics and needs of the premium service segment of the hospitality industry.
470. ADVANCED RESTAURANT MANAGEMENT (3). Lec. 2, Lab. 3. Pr., HRM 410, 460. Concepts in premium service restaurant management.
480. ADVANCED BEVERAGE MANAGEMENT (3). Pr., HRM 410, 460. Beverage management and control in commercial food service.
490. PROFESSIONAL INTERNSHIP IN HOSPITALITY MANAGEMENT (5). Pr., HRM major and departmental approval of application. Practice in hotels, restaurants and clubs.

### Pharmaceutical Sciences (PY)

Professors Ravis, Head, Clark, Coker, Darling, Doorenbos, Hamrick, Riley and Wilken  
Associate Professors Parsons and DeRuiter  
Assistant Professors Betageri, Smith and Walters

301. PHARMACEUTICS I (3). Lec. 3. Coreq., PY 301L. Physical-chemical principles are applied to develop an understanding of solid dosage forms and homogeneous liquid dosage forms. Selected official preparations are considered from this viewpoint.
- 301L. PHARMACEUTICS I LABORATORY (1). Lab. 3. Coreq., PY 301. Application of principles and techniques to preparation and usage of solid dosage forms including powders, tablets, capsules, and prolonged release types.
302. PHARMACEUTICS II (3). Lec. 3. Pr., PY 301, 301L. Coreq., PY 302L. A continuation of PY 301 dealing with heterogeneous and plastic systems and the physical and chemical principles applicable to plastic and polyphasic dosage forms including suspensions, colloids, mixtures, ointments, creams, emulsions and lotions.
- 302L. PHARMACEUTICS II LABORATORY (1). Lab. 3. Pr., PY 301, PY 301L. Coreq., PY 302. Application of principles and techniques to preparation and usage of liquid, heterogeneous and plastic dosage forms including solutions, syrups, elixirs, suspensions, emulsions, ointments, creams and lotions.
316. MODERN METHODS OF DRUG ANALYSIS (4). Lec. 3, Lab. 3. Pr., CH 301. Theory and application of physical and chemical methods with special emphasis on the use of chromatography, instrumentation, and nonaqueous systems in the analysis of pharmaceutical products.
401. PHARMACEUTICS III (4). Lec. 4. Pr., PY 302, 302L. Influence of formulation on the therapeutic activity of a drug in a dosage form, emphasizing effects of dosage forms on biological response, physiological factors which may affect the drug contained in the dosage form and the dosage form of the drug itself.
403. PHARMACEUTICS IV (3). Lec. 3. Pr., PY 401. An introduction to the prescription, its interpretation, handling, compounding and dispensing together with pertinent calculations and techniques.
- 403L. PHARMACEUTICS IV LAB. (1). Lab. 3. Coreq., PY 403. A laboratory in which compounding and dispensing of prescriptions and proprietaries are practiced.
420. MEDICINAL CHEMISTRY I (5). Pr., CH 302, PY 316, ZY 561; Coreq., PY 531. Relationship of physicochemical properties to the pharmacological actions of therapeutic agents. The mechanism of action, classification and structure-activity relationships of drugs in terms of their physical and chemical properties.
421. MEDICINAL CHEMISTRY II (5). Pr., PY 420, 531; Coreq., PY 532. A continuation of PY 420.
422. MEDICINAL CHEMISTRY III (5). Pr., PY 421, 532; Coreq., PY 533. A continuation of PY 421.

423. SURVEY OF MEDICINAL CHEMISTRY (5). Pr., CH 305 or COI. Credit in PY 420, 421 or 422 precludes credit for this course. A survey of the molecular action of drugs which emphasizes the relationships of physicochemical and structural properties of organic compounds to their pharmacologic activity.
434. NUCLEAR PHARMACY (3). LEC. 3. Pr., PY 532. Use of radioisotopic material in the diagnosis and treatment of disease, including the nature of radiation and its interaction with biological material, measurement of radioactivity, preparation of dosage forms, safe handling of isotopes and legal requirements of radiopharmacy.
- 434L. NUCLEAR PHARMACY LAB. (1). LAB. 3. Pr., or Coreq. PY 434. A laboratory experience designed to meet certification requirements in Nuclear Pharmacy. Includes experiments in the characteristics of ionizing radiation, instrumentation, dosimetry, and dose preparations using the molybdenum-technetium generator and kits.
436. CANCER CHEMOTHERAPY (3). LEC. 3. Pr., PY 533, COI. Consideration of theoretical and practical aspects of drug use in therapy of neoplasms.
444. HYPERTENSION SCREENING AND EDUCATION (1). Pr., PC 448. A comprehensive review of the etiology, pathology, and pharmacotherapeutics of hypertension. Participation in community screening and education experiences is required.
445. DIABETES (1). Pr., 4 PY standing. Physiology, pathology, and treatment of diabetes. Monitoring techniques of home therapy.
495. SPECIAL PROBLEMS (1-3). Pr., COI; may be repeated for a maximum of eight credit hours.
502. PHARMACOKINETICS (5). LEC. 4, LAB. 3. Pr., PY 401, PC 448. The time course of drug absorption, distribution, metabolism and excretion and the pharmacodynamic relationships.
511. ELEMENTS OF PHARMACEUTICAL MANUFACTURING (2). LEC. 2. Pr., PY 302, 302L. Manufacturing procedures, operation and principles. In the laboratory selected pilot scale production problems are carried out to completion including control and testing of finished products.
- 511L. PHARMACEUTICAL MANUFACTURING LAB. (3). LAB. 9. Coreq., PY 511. Pilot scale production including control, evaluation and testing of finished products.
512. INTRAVENOUS ADMIXTURES AND STERILE PREPARATIONS (3). LEC. 1. Pr., PY 302, Coreq., PY 512L. Principles involved in the preparation of IV admixtures, total parenteral nutrition, and sterile dosage forms in hospitals, clinics and professional pharmacies.
- 512L. INTRAVENOUS ADMIXTURES AND STERILE PREPARATIONS LABORATORY (1). LAB. 3. Coreq., PY 512. Sterilization procedures, IV service techniques and total parenteral nutrition preparations are studied including the necessary calculations and equipment.
531. PHARMACOLOGY I (5). Pr., PC 347 Coreq., PY 420. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.
532. PHARMACOLOGY II (5). LEC. 5. Pr., PY 420, 531; Coreq., PY 421. Continuation of PY 531.
533. PHARMACOLOGY III (5). LEC. 4. Pr., PY 421, 532; Coreq., PY 422. Continuation of PY 532.
534. TOXICOLOGY LABORATORY (1). LAB. 3. Pr., ZY 561, PY 531 or COI, Coreq. PY 535. Exercises in acute and chronic toxicity, isolation, identification and analysis of metals, organic acids and bases from biological specimens.
535. TOXICOLOGY (5). Pr., PY 533. The basic science of poisons including the acute and chronic toxicology of common environmental, agricultural, industrial, commercial, medicinal and natural products.
536. CELLULAR PHARMACOLOGY (5). Pr., ZY 561, CH 302. Cytological basis of pharmacodynamics including metabolic energy transformation, protein synthesis and cellular control systems as related to drug actions.
537. FUNDAMENTALS OF BIONUCLEONICS (3). LEC. 2, LAB. 3. Pr., PS 206, COI and second professional year standing. Theoretical and practical application of trace level radioactivity for research application to pharmacy and allied sciences.
538. PHARMACEUTICAL METHODOLOGIES (5). LEC. 2, LAB. 9. Pr., CH 302, ZY 561. Principles and techniques used in research in the basic pharmaceutical sciences.

### **Pharmacy Care Systems (PCS)**

Professors Barker, Head, and Berger

Associate Professors Gibson, Newton and Pearson

Assistant Professors Anderson-Harper and Felkey

Adjunct Assistant Professors Henry, King, Miller and Swensson

261. HISTORY AND ORIENTATION (3). LEC. 3. Pr., PPY or PY standing. Introduction to delivery of health care services with emphasis on the role of the profession of Pharmacy.
265. DRUGS AND YOUR HEALTH (3). LEC. 3. Pr., non-pharmacy majors, sophomore standing. Emphasizing rational use of prescription and non-prescription medications. Topics include: how to use illicit drugs and chemical substances appropriately; development of drugs; economic factors which impact on health care; drugs and pregnancy, children, and the elderly; and the use of self-help medications for a variety of conditions.
360. PHARMACY CONVOCATION (0). Third professional year standing. Professional topics discussed by visiting lecturers, faculty and students.
361. DRUG LITERATURE ANALYSIS (3). LEC. 3. Coreq., ZY 561, CH 302, and PY 302. Evaluation of current therapeutic and drug literature using the scientific method models.

461. INSTITUTIONAL PHARMACY I (5). LEC. 5. Pr., PY standing. The development of hospitals, their place in society, importance and place of pharmacy in hospitals and nursing homes. The organization, staffing, services, legal requirements, development of institutional pharmacy departments, and interdepartmental relationships to provide comprehensive pharmacy services.
462. HOSPITAL PHARMACY LABORATORY (1). LAB. 3. Pr., PY 401 and COI. Course may be repeated for a maximum of three credit hours. Hospital pharmacy experience is obtained in the environment of participating hospitals. Students are expected to furnish transportation for this elective course.
464. PHARMACY JURISPRUDENCE (5). Pr., PCS 361. Basic legal and ethical principles of pharmaceutical patient care and their effect on the patient drug use process.
465. PHARMACY OPERATING SYSTEMS (5). LEC. 3, LAB. 6. Pr., PCS 261. Methods of systems and decision analysis applied to problems of optimizing the use of money, equipment, drug products, information and personnel within community and institutional environments.
466. ENVIRONMENT OF DRUG DELIVERY (3). Pr., PCS 261. Basic political, legal, social, ethical and economic principles of delivering the drug component of health care to patients.
470. CLINICAL DRUG TRIALS (3). LEC. 3. Pr., PCS 361, 473. The design, planning, and execution of protocols for Phase I, II, and III clinical drug trials, including the relative merits of prospective and retrospective methodologies for various disease states.
471. PROFESSIONAL COMMUNICATION I (3). LEC. 2, LAB. 3. Pr., PY standing. The nature, purpose and process of communication for the Health Professional. Interviewing, detailing, advertising, and patient counseling are covered along with patient education and information dissemination.
472. PROFESSIONAL COMMUNICATION II (3). LEC. 2, LAB. 3. Pr., PCS 471. Continuation of PCS 471.
473. CLINICAL BIostatISTICS (3). LEC. 3. Pr., PCS 361. Biostatistical analysis of clinical data including data collection protocols; psychological and biophysical medical assessment; descriptive and inferential statistics.
495. SPECIAL PROBLEMS (1-3). Pr., COI. Individualized investigation of pharmacy care systems problems as related to the delivery of health care services.
509. INSTITUTIONAL PHARMACY II (5). LEC. 4, LAB. 3. Pr., PC 448, PCS 461 and COI. Comprehensive presentation of the development, responsibilities, classification, organization and administration of the pharmacy in hospitals, nursing homes, etc., from the viewpoint of the administrative pharmacist. Provides a survey of the responsibilities of the director of pharmacy service in a hospital.
531. TOPICS IN CLINICAL PHARMACY ADMINISTRATION (2). LEC. 2. Pr., PY standing. Mechanisms of health care reimbursement and the initiation and maintenance of a clinical service.
562. INTRODUCTION TO MEDICATION INFORMATION SYSTEMS (3). LEC. 2, LAB. 3. Pr., MN 207 and junior standing. Introduction to the design, control and planning of electronic information systems used to implement medication orders and manage the medication distribution system. Five concepts are emphasized.
563. PUBLIC HEALTH (5). LEC. 4, LAB. 3. Pr., BY 302, PCS 361 or equivalent. Epidemiological study of diseases of man. A survey of the public health and preventive medicinal programs of federal, state, local and private agencies is included.
564. DRUG DISTRIBUTION SYSTEMS (5). LEC. 4, LAB. 3. Pr., PCS 562, PCS 465, PCS 464. Application of the principles of cybernetics to drug distribution systems in hospitals, nursing homes and other inpatient facilities.

### **Pharmacy Practice, Clinical (PC)**

Associate Professors Campagna, *Head*, Alexander, Beck,  
Janer, Lazarus, Tanja and Thomasson

Assistant Professors Guenther, Malloy, McMillan, Pennell, Reinke and Thomas  
Adjunct Associate Professor R. Davis

Adjunct Assistant Professors Albrant, Bowman, Breland, Collette, Collins, Como,  
Cramer, Diamond, Farringer, Fisher, Geerts, Ginn, Griffies, Hendrix, Krinsky,  
Lae, Lockwood, Markiewicz, Martin, McClellan, Moore, Morgan, Norman, Parker,  
Rutan, Shawyer, M. Short, Taylor, Thompson, Vance and Wix

Adjunct Instructors Arledge, Ball, Barr, Batt, Blakely, Brandon, Beasley,  
Bledsoe, Breaux, Brookiere, J. Brown, Burckhart, Clark, Cooper, Davis, Deloach,  
Dykes, Easter, Epp, Forde, Franks, Galtney, Godfrey, Hartenstein, Henderson,  
Hession, Hinkle, Holley, Hurley, Johnston, Jones, Josof, Keaton, Ketchum,

Knight, Knowlton, B. Main, T. Main, Maund, McCarny, McLemore, Morris, H. Nelson,  
J. Nelson, Nix, Owen, Peoples, Pittman, Prickett, Redden, Sanchez, Sandlin,  
C. Scarborough, J. Scarborough, Schenk, Seale, B. Short, Shoff, Silvey, Simmons,  
Simonson, Smith, Stamitoles, Stephenson, B. Street, J. Street, Thomas, M. Turner,  
P. Turner, Walls, Weeks, Whitehead, Woodward, Vinson and Young

347. HUMAN PATHOLOGY (5). LEC. 5. Pr., ZY 561, CH 302, Coreq., PC 346. The general mechanisms and language of disease. Special emphasis on pathogenesis of disease to include an understanding of the dynamic nature of disease.
348. PHARMACEUTICAL TERMINOLOGY (2). LEC. 2. Pr., first professional year standing. Common terms and abbreviations used in the professional and scientific aspects of pharmacy and medicine.

446. THERAPEUTICS I (4). LEC. 4. Pr., PC 347. Coreq., PY 401, 420, 531. Selected diseases and the assessment of therapeutic and adverse responses to pharmacologic agents of choice.
447. THERAPEUTICS II (4). LEC. 4. Pr., PC 446. Coreq., PY 421, 532. Continuation of PC 446.
448. THERAPEUTICS III (4). LEC. 4. Pr., PC 447. Coreq., PY 422, 533. Continuation of PC 447.
450. AUTOTHERAPY (3). LEC. 3. Pr., PC 448, PY 422, 533. Introduction to the triage function of the pharmacist. Evaluation of and response to patient illness complaints.
452. DRUG INFORMATION ORIENTATION (2). LEC. 2. Pr., PC 346, 347. Evaluation, assimilation, and dissemination of drug information.
453. PROFESSIONAL PRACTICE (3). LEC. 1, LAB. 6. Pr., 3rd prof. year standing. CoI. Placement of students in various pharmacy practice environments to increase knowledge of practice options.
454. CARDIOPULMONARY LIFE SUPPORT (1). Pr., PC 448. The techniques used to administer basic life support to adults, children and infants. The devices and drug therapy used in advanced cardiac life support.
455. VENEREAL DISEASE EDUCATION AND CONTRACEPTION (1). Pr., PC 448. The epidemiology, modes of transmission, prevention, diagnosis and treatment of venereal diseases. The proper use, effectiveness, adverse effects and contraindications of contraceptive methods.
456. DRUG ABUSE/POISON PREVENTION EDUCATION (1). Pr., PC 448. Drugs and chemical substances used for non-therapeutic purposes and specific treatment modalities for intoxications.
457. DRUG INTERACTIONS (3). LEC. 3. Pr., PC 448, PY 422, 533. Mechanisms of drug interactions with other drugs, foods, and endogenous materials and modifications of laboratory tests due to drugs.
458. INSTITUTIONAL PRACTICE EXTERNSHIP (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A structured practicum in an institutional setting of five weeks (200 hours) duration.
459. COMMUNITY PRACTICE EXTERNSHIP (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A structured practicum in a community pharmacy setting of five weeks (200 hours) duration.
460. CLERKSHIP-CLINICAL PRACTICE (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A clinical rotation of five weeks (200 hours). Students participate in patient care activities that teach skills necessary for solving therapeutic problems and evaluating drug therapy.
461. CLERKSHIP-SPECIALTY ELECTIVE (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A five-week (200 hours) professional practice experience approved by the department.
495. SPECIAL PROBLEMS (1-3). Pr., CoI. Individualized investigation of clinical pharmacy problems as related to the delivery of health care services.
501. DRUG INFORMATION RETRIEVAL AND ANALYSIS (4). Pr., PC 452, PCS 361. Drug information retrieval, analysis and communication with emphasis on developing written communication skills.
- 502-503. RESEARCH METHODS I-II (3-3). Pr., PCS 361, PC 452. Assessment and interpretation of research design in pharmacy/medical literature.
- 510-511-512. ADVANCED THERAPEUTICS I-II-III (6-6-6). Pr., PC 448. Pathophysiology, physical assessment and pharmacotherapy of the common disease states.
520. DRUG-INDUCED DISEASE (3). Pr., PC 448. Patient evaluation in drug-induced disease and adverse drug reaction surveillance.
521. APPLIED PHARMACOKINETICS (3). Pr., PY 502. Formulation of a consultation for patient cases in which pharmacokinetic principles apply.
530. ADVANCED PATIENT MONITORING (3). LEC. 1, LAB. 6. Pr., PC 512, admission to Doctor of Pharmacy program. Evaluation of patient data, identification of drug therapy-related problems and development of therapeutic plan.
540. ORIENTATION TO THE CLINICAL ENVIRONMENT (2). Pr., admission to Doctor of Pharmacy program. Orientation to the institutional clinical environment in preparation for clerkship responsibilities.
541. PSYCHOSOCIAL ISSUES IN CLINICAL PRACTICE (1). Pr., admission to the Doctor of Pharmacy program. Coreq., clerkship sequence. Case studies of rational drug therapy in which psychological and social issues are involved.
542. CLINICAL SEMINAR (1). Pr., admission to Doctor of Pharmacy program. Coreq., clerkship sequence. Student seminars on topics in drug therapy.
- 550-568. CLERKSHIP (INCLUSIVE) (9). Pr., admission to Doctor of Pharmacy program, required coursework. Clinical rotation of five weeks (200 hours). Rational pharmacotherapeutics and patient assessment. Verbal and written communication skills emphasized.

The clerkship titles are:

550. CLERKSHIP — DRUG INFORMATION
551. CLERKSHIP — CLINICAL PHARMACOKINETICS I
552. CLERKSHIP — CLINICAL PHARMACOKINETICS II
553. CLERKSHIP — AMBULATORY CARE
554. CLERKSHIP — GENERAL INTERNAL MEDICINE
555. CLERKSHIP — PULMONARY MEDICINE
556. CLERKSHIP — ONCOLOGY/HEMATOLOGY
557. CLERKSHIP — ONCOLOGY/SOLID TUMORS
558. CLERKSHIP — CARDIOLOGY I



- 559. CLERKSHIP — CARDIOLOGY II
- 560. CLERKSHIP — RHEUMATOLOGY
- 561. CLERKSHIP — ENDOCRINOLOGY
- 562. CLERKSHIP — RENAL TRANSPLANT MEDICINE
- 563. CLERKSHIP — NUTRITION CONSULTATION SERVICE
- 564. CLERKSHIP — PSYCHIATRY
- 565. CLERKSHIP — SURGERY
- 566. CLERKSHIP — NEONATOLOGY
- 567. CLERKSHIP — MEDICINE SPECIALTY
- 568. CLERKSHIP — ELECTIVE AREA

## Philosophy (PA)

Professors McKown, Head, Andelson, Davis, Hiley and Machan

Associate Professors Brown, Perry and White

Assistant Professors Cumbee, Elfstrom, Walters and Yates

- 101. INTRODUCTION TO LOGIC (5). Basic logical principles and applications; definition and classifications, informal fallacies, categorical logic, elementary propositional logic, analogy and selected inductive inferences.
- 102. INTRODUCTION TO ETHICS (5). The basic concepts, types and schools of moral theory, and illustrates how these may be applied to contemporary moral problems.
- 210. INTRODUCTION TO PHILOSOPHY (3). The methods of philosophical inquiry and an examination of selected philosophical topics.
- 211. INTRODUCTION TO DEDUCTIVE LOGIC (3). Pr., PA 111 or COI. Principles of deduction in categorical, syllogistic, and propositional logics.
- 216. PHILOSOPHIES OF HUMAN NATURE (3). Examines philosophical anthropology by surveying alternative theories of human nature.
- 218. ETHICS AND THE HEALTH SCIENCES (5). Topics such as contraception, abortion, and eugenics; human experimentation; truth in drugs and medicine; death and dying; and other health related issues in order to clarify relevant ethical considerations and to provide philosophical bases for decisions on right and wrong, good and bad, rights and responsibilities.
- 219. BUSINESS ETHICS (5). Covers normative issues associated with commerce such as advertising, management and business abroad.
- 220. HONORS LOGIC (5). Informal fallacies; term and syllogistic logic, elementary propositional logic.
- 221. HONORS PHILOSOPHY (3). Philosophical methods and their applications to problems in epistemology and metaphysics.
- 222. HONORS ETHICS (5). Major ethical theories from the history of philosophy; their foundations in epistemology and metaphysics and their extension into social thought.
- 305. AESTHETICS (5). Examines theories of beauty and art from Plato to contemporary thinkers.
- 311. SYMBOLIC LOGIC (5). Pr., PA 211 or COI. Propositional logic and predicate logic through relations: natural language and logic; some philosophical problems in logic.
- 330. PHILOSOPHY OF RELIGION (5). Examines the nature of religion, religious language, religious knowledge, religious theories of man and evil and examines arguments for the existence of God and the immortality of the soul.
- 333. HISTORY OF PHILOSOPHY I. ANCIENT AND EARLY MEDIEVAL (5). Surveys of philosophic thought from the Pre-Socratics through Aquinas, emphasizing Plato and Aristotle.
- 334. HISTORY OF PHILOSOPHY II. LATE MEDIEVAL AND EARLY MODERN PHILOSOPHY (5). Surveys philosophic thought from Occam to Kant emphasizing major thinkers.
- 335. HISTORY OF PHILOSOPHY III. RECENT AND CONTEMPORARY PHILOSOPHY (5). Surveys various representatives of the major philosophical trends during these periods.
- 340. MEDIEVAL PHILOSOPHY (5). Survey of philosophical thought from late antiquity through the Middle Ages. Emphasis on Plotinus, Islamic thinkers, Augustine, Abelard, Anselm and Thomas Aquinas.
- 360. POLITICAL PHILOSOPHY (5). Combines a historical and analytical approach. The political thought of both classical and contemporary thinkers, including Plato, Aristotle, Machiavelli, Hobbes, Locke, Mill, Spencer, Marx, Rawls and Nozick will comprise the chief focus of the course, together with such concepts as sovereignty, natural law, liberty, equality and order.
- 380. PRAGMATISM (5). Emphasis on Peirce, James, and Dewey. Some philosophical issues examined from a pragmatic viewpoint.
- 401. PHILOSOPHICAL FOUNDATIONS OF COMMUNISM (5). Pr., Junior standing. Examines the thought of Marx-Engels and its development in Kautsky, Bernstein, Lenin.
- 402. EXISTENTIALISM (5). Pr., Junior standing. Selected works of such authors as Kierkegaard, Nietzsche, Sartre, Jaspers, and Heidegger.
- 425. PHILOSOPHY OF MIND (5). Pr., Junior standing. Examines classical and modern texts on the phenomenology of consciousness and mind-body problems.

432. **PROCESS PHILOSOPHY (5).** Pr., junior standing. An examination of selected writings of Bergson, James and Whitehead.
440. **CONTEMPORARY MARXISM (5).** Pr., junior standing. Examines the thought of Lukacs, Stalin, Merleau-Ponty, Sartre, Habermas, Marcuse and others.
455. **METAPHYSICS (5).** Pr., junior standing. A critical analysis of such topics as monism and pluralism, freedom and determinism, realism and nominalism and the mind-body problem.
460. **EPISTEMOLOGY (5).** Pr., junior standing. The origin, nature, kinds, and validity of knowledge, with a consideration of faith, intuition, belief, opinion, certainty and probability.
470. **PLATO (5).** Pr., junior standing. Examines such topics as Plato's Methodology, epistemology, metaphysics, ethics, political theory.
475. **ARISTOTLE (5).** Pr., junior standing. Examines Aristotle's logic, epistemology, metaphysics, ethics, political theory, psychology.
479. **HONORS THESIS (3-6).** Repeatable once for a maximum of six hours credit. Senior thesis for students in the University Honors Program.
482. **BRITISH EMPIRICISM (5).** Pr., junior standing. Examines 17th- and 18th-century empiricism emphasizing Locke, Berkeley, Hume.
484. **CONTINENTAL RATIONALISM (5).** Pr., junior standing. Examines major themes in such thinkers as Descartes, Spinoza, Leibniz, Gassendi.
492. **PHILOSOPHY OF LAW (5).** The nature and function of law including such topics as judicial reasoning, the ground of authority, natural law, legal responsibility, punishment, civil disobedience, and the relation of law to ethics and the behavioral sciences.
498. **READINGS IN PHILOSOPHY (1-10).** Pr., junior standing, a 3.25 average in relevant prior work either in philosophy or in related areas and consent of department head and instructor. Specific reading programs may be developed which pertain to a particular philosopher, period or problem. A paper and an examination will be expected. May be repeated for credit.

#### ADVANCED UNDERGRADUATE AND GRADUATE

504. **MODERN ETHICAL THEORIES (5).** Recent analyses of the meanings, presuppositions, and problems of ethical terms and judgments.
513. **PHENOMENOLOGY (5).** The phenomenological method and its application in the works of William James, Husserl, Heidegger, Sartre and Merleau-Ponty.
515. **PHILOSOPHY OF SCIENCE (5).** Such topics as empirical meaning, verifiability, measurement, probability, causality and determinism.
580. **ANALYTIC PHILOSOPHY (5).** Philosophical analysis in the 20th century from G. E. Moore through the Oxford analysis.
590. **KANT AND TRANSCENDENTAL IDEALISM (5).** The philosophy of Kant in particular but also of the early Fichte and Schelling and of neo-Kantians.
591. **HEGEL AND ABSOLUTE IDEALISM (5).** The philosophy of Hegel in particular but also of the late Fichte and Schelling, of neo-Hegelians and of Schopenhauer and other critics.
650. **SEMINAR (1-10).** Pr., COI. The content will change for each quarter in any one calendar year. This will vary from movements of thought to an intensive study of one of the great thinkers such as Plato or Whitehead. May be repeated for credit.

### Physical Science (PHS)

Associate Professors Ward and Simon

- 100-101. **INTRODUCTORY PHYSICAL SCIENCE (5-5).** LEC. 4, LAB. 2. An introduction to physics, chemistry, astronomy and earth sciences for students in liberal arts, education, business, and non-science pre-professional curricula. The approach is primarily historical and cultural rather than quantitative, although adequate preparation is provided for those who will teach elementary school science. Credit in PS 200, 205, or 220 precludes credit for PHS 100.

#### ADVANCED UNDERGRADUATE AND GRADUATE

530. **MODERN CONCEPTS IN PHYSICAL SCIENCE I (5).** LEC. 4, LAB. 3. Pr., PHS 101 or PS 206 or COI, junior standing. General physical science based on IPS materials designed to acquaint the student with the IPS approach. Not available to graduate students in the areas of science or mathematics.
531. **MODERN CONCEPTS IN PHYSICAL SCIENCE II (5).** LEC. 4, LAB. 3. Pr., PHS 101 or PS 206 or COI, junior standing. A survey of physics topics using PSSC and Project Physics materials designed to acquaint the students with these approaches to high school physics. Not available to graduate students in the areas of science or mathematics.
532. **NUCLEAR SCIENCE FOR TEACHERS (5).** LEC. 4, LAB. 3. Pr., a course in general physics and preferably one in chemistry plus junior standing, junior or senior high school teacher, or COI. The fundamentals of atomic and nuclear structure, designed for junior and senior high school teachers, including the study of radioactivity and nuclear radiation, radiation detection, radiological safety, nuclear fission and fusion, nuclear power reactors and power generation, advantages and hazards of nuclear power reactors. Not available to graduate students in the areas of science or mathematics.

# Physics (PS)

Professors Perez, Head, Alford, Askew, Clothiaux, Fromhold,  
Hinata, Latimer, Pindzola and Swanson  
Walter Professor Barnes  
Alumni Professor Chen

Associate Professors Kinzer, Cooper, Gandy, Hanson, Hyder, Fukai, Simon,  
Ward, Wersinger and Williams

Assistant Professors Bozack, Knowlton and Tin  
Adjunct Professor Budenstein

200. FOUNDATIONS OF PHYSICS (5). LEC. 4, LAB. 3. The principles of mechanics, heat, light, sound, electricity, magnetism and selected topics from modern physics. Credit in PS 205 or 220 precludes credit for this course. Not available to graduate students in the areas of science or mathematics.
- 205-206-207. INTRODUCTORY PHYSICS I, II, III (3-3-3). LEC. 3, Pr., for PS 205, MH 160; for PS 206, PS 205; for PS 207, PS 206. Coreq., for PS 205, PS 205L; for PS 206, PS 206L; for PS 207, PS 207L. A three-quarter sequence covering topics in mechanics, fluids, heat, wave motion, sound, electricity, magnetism, light, relativity, atomic and nuclear phenomena and radiation. Quantitative as well as qualitative aspects of the subject are stressed utilizing algebra and trigonometry. Credit for the PS 220-221-222 sequence precludes credit for the 205-206-207 sequence.
- 205L-206L-207L. INTRODUCTORY PHYSICS LABORATORY I, II, III (1-1-1). LAB. 3. Coreq., for PS 205L, 205; for PS 206L, PS 206; for PS 207L, PS 207. Selected laboratory experiments paralleling the topics covered in PS 205, 206 and 207 respectively.
215. ASTRONOMY (5). LEC. 4, LAB. 3. Open to non-science majors. The planet Earth and the solar system; the stars; theories of stellar evolution, neutron stars, black holes, supernova, galaxies and the expanding universe; modern cosmological theories. The laboratory emphasizes studies with the telescope.
220. GENERAL PHYSICS I (3). LEC. 3. Coreq., MH 163, PS 220L. Mechanics using calculus. The three-quarter sequence PS 220-221-222 serves as a foundation for students enrolled in science and engineering programs.
- 220L. GENERAL PHYSICS LABORATORY I (1). LAB. 3. Coreq., PS 220. Selected laboratory experiments paralleling topics covered in PS 220.
221. GENERAL PHYSICS II (3). LEC. 3, Pr., PS 220, 220L. Coreq. PS 221L, MH 264. A continuation of PS 220 including gravity, electricity and magnetism.
- 221L. GENERAL PHYSICS II (1). LAB. 3. Coreq., PS 221. Selected laboratory experiments paralleling topics covered in PS 221.
222. GENERAL PHYSICS III (3). LEC. 3, Pr., PS 221, Coreq., PS 221L. A continuation of PS 221 including heat, light and sound.
- 222L. GENERAL PHYSICS LABORATORY III (1). LAB. 3. Coreq., PS 222. Selected laboratory experiments paralleling topics covered in PS 222.
- 300-301. ELECTRICITY AND MAGNETISM I, II (4-4). Pr., for PS 300, PS 222, MH 269; for PS 301, PS 300, MH 501. Electrostatics, study of fields in dielectrics, magnetic forces and their effects, electric and magnetic properties of matter, Maxwell's equations, electro magnetic waves and radiation.
302. ELECTRONICS (5). LEC. 4, LAB. 3, Pr., PS 222, MH 269. Review of AC and DC circuits; theory of vacuum tubes and semiconductors; diodes as rectifiers and regulators; tube and transistor voltage and power amplifiers; feedback amplifiers and oscillators; pulse and digital circuits. Appropriate laboratory exercises form a part of the course.
303. OPTICS (4). Pr., PS 301 or EE 392, MH 501, Junior standing. Intermediate course in physical optics comprising wave motion, reflection, refraction, dispersion, origin of spectra, interference, diffraction and polarization.
305. INTRODUCTION TO MODERN PHYSICS (4). Pr., PS 222 or 206, MH 265 or 269. Introduction to relativistic kinematics and dynamics, particle aspects of electromagnetic interaction, Schrodinger wave mechanics, structure of the hydrogen atom, many electron atoms, nuclear structure and reactions, elementary particles, and molecular and solid-state physics. Credit in PS 207 or 320 precludes credit in this course.
306. PHYSICS LABORATORY (2). LAB. 6, Pr., PS 300, 305. Selected laboratory experiments from fields of electricity, magnetism and modern physics.
320. MODERN PHYSICS FOR ENGINEERS (3). LEC. 3, Pr., PS 222, MH 264. Introduction to modern physics, including special relativity, Schrodinger wave mechanics, atomic and nuclear systems, elementary particles. Credit in PS 207 or 305 precludes credit in this course.
412. SEMINAR IN MODERN PHYSICS (1). Pr., senior standing. Library search, written reports, and oral presentation of a pertinent topic in modern physics.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for maximum of six hours credit.
491. UNDERGRADUATE RESEARCH (3-5). LAB. 9-15. Pr., COI and senior standing. Each student will work under the direction of a staff member on a problem of mutual interest. May be repeated for a maximum of 15 credit hours.

## ADVANCED UNDERGRADUATE AND GRADUATE

501. MECHANICS I (5). Pr., MH 265. Newtonian mechanics, linear oscillations, non-linear oscillation introduction to calculus of variations.
502. MECHANICS II (5). Pr., PS 501. Hamilton's principle and Lagrange's equations, central force motion, collisions, non-inertial frames, rigid body dynamics, vibrating systems.
504. STATISTICAL THERMODYNAMICS (5). Pr., PS 516 or concurrently, senior standing. Temperature, entropy and chemical potential are developed from the principles of equilibrium quantum states. The Gibbs representation is introduced and applied to the development of equilibrium distribution functions. Quantum statistics is developed and applied to problems.
- 506-507. EXPERIMENTAL PHYSICS I, II (2-2). LAB. 8-6. Pr., PS 301, 302. Coreq. PS 303. Selected experiments from the areas of modern physics, optics, nuclear physics, plasmas and solid state physics.
513. INTRODUCTION TO X-RAY CRYSTALLOGRAPHY (5). LEC. 4, LAB. 3. Pr., PS 305, COI. Principles of crystallography, the reciprocal lattice, theory of x-ray diffraction and the powder, laue and diffractometer methods.
- 515-516. INTERMEDIATE MODERN PHYSICS I, II (5-5). Pr., MH 269, PS 305 or 320. Special theory of relativity; introductory quantum mechanics with applications to microscopic systems; Fermi-Dirac, Bose-Einstein statistics; and electronic bands in solids.
517. INTRODUCTION TO BIOPHYSICS (5). Pr., COI. The physics of biological systems, with emphasis on the cellular and subcellular levels; effects of light and high energy radiations, bio-electric phenomena, bio-energetics, etc.
520. NUCLEAR PHYSICS AND ELEMENTARY PARTICLES (5). Pr., PS 516. Radioactivity; nuclear radiation; nuclear forces, structure of nucleus, nuclear reactions, accelerators and reactors. A treatment of elementary particles including conservation laws, symmetry principles, decay modes and classification.
521. MODERN ELECTRONICS (5). LEC. 3, LAB. 6. Pr., PS 302. Network theory and digital logic; state-of-the-art electronic devices; operational amplifiers; linear and digital integrated circuits; servo systems; selected topics in modern instrumentation.
- 531-532-533. METHODS OF THEORETICAL PHYSICS I, II, III (3-3-3). Pr., MH 362. Theoretical methods used in classical and quantum physics, including applications of transformations, special functions, Green's functions, variation and perturbation theory, tensor and group theory.
535. INTRODUCTION TO SOLID STATE PHYSICS (5). Pr., PS 516, MH 264 or COI. Solid state phenomena including lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic phenomena.
545. PLASMA PHYSICS (4). Pr., PS 301. COI or senior standing. Collision phenomena in gases, creation of ionized gases (plasmas), interaction of plasmas and fields, plasma heating, instabilities, radiation and applications.
560. GENERAL THEORY OF RELATIVITY (4). Pr., MH 269, PS 305 or 320, COI or junior standing. Tensor analysis by computer using the analytical language FORMAC. General theory of relativity with applications.
575. COMPUTER SIMULATION OF PHYSICAL SYSTEMS (3). Pr., MH 265 or 269, PS 220-221-222 or 205-206-207 and some proficiency in PASCAL, C, MODULA-2, BASIC or FORTRAN. Employment of computer simulation techniques in realistic applications of physics.
590. SPECIAL TOPICS IN ADVANCED PHYSICS (1-5). Pr., COI. Topics will vary as needed. May be taken for credit more than once.

## Plant Pathology (PLP)

Professors Jacobsen, Head, Backman, Curl, Gazaway, Gudauskas,  
Morgan-Jones and Rodriguez-Kabana  
Associate Professors Hagan, Latham and Kloepper  
Assistant Professors Bowen, Davis, Collins and Tuzun

215. FOREST PESTS (4). LEC. 3, LAB. 1. Pr., BI 101, 102. Spring. Diseases and pests of forest and shade trees from seedling to maturity. Pest damage to wood products will also be discussed. Field trip will emphasize major forest pest problems in Alabama.
309. GENERAL PLANT PATHOLOGY (5). LEC. 4, LAB. 2. Pr., BI 101-102. Winter, Spring. Nature cause, and control of plant diseases illustrated by studies of common diseases of field crops, fruits, vegetables, turf and ornamentals.
403. PESTICIDES (5). LEC. 4, LAB. 3. Pr., CH 207. Winter. The chemistry, mode of action, activity, formulations, applications and legal aspects of pesticides and pesticide applications.
407. CONCEPTS OF PEST MANAGEMENT (5). LEC. 4, LAB. 3. Pr., COI. Spring. Pest management technology and philosophy.
460. SPECIAL PROBLEMS (1-3). Pr., COI, senior standing. All quarters. A. Pathology; B. Virology; A student cannot register for more than three hours credit in any one quarter or in any one area.

## ADVANCED UNDERGRADUATE AND GRADUATE

505. INTRODUCTORY MYCOLOGY (5). LEC. 3, LAB. 4. Pr., BI 101-102 or equivalent. Fall. A systematic survey of the fungi with emphasis on morphology.
510. DISEASES OF FRUITS AND VEGETABLES (3). LEC. 2, LAB. 1. Pr., PLP 309 or equivalent. Spring. Nature, cause, and control of fruit and vegetable crop diseases illustrated by study of common diseases.

518. PLANT DISEASE DIAGNOSIS (5). LEC. AND LAB. 8. Pr., PLP 309 or COI. Summer. Approaches, techniques and practical experience in the diagnosis of plant diseases.
553. PRINCIPLES OF PLANT DISEASE CONTROL (3). LEC. 2, LAB. 2. Pr., PLP 309 or equivalent. Spring. Plant disease control strategies; exclusion, eradication, resistance, and protection. The role of each of these disease management strategies will be studied in the development of integrated plant disease management program that utilize cultural, biological and chemical controls.
554. PHYSIOLOGY OF FUNGI (5). LEC. 3, LAB. 4. Pr., PLP 505 and one of the following: MB 300, BY 306 or ADS (CH) 518 or COI. Spring, odd years. Cellular structure, function, nutrient requirements and absorption, metabolism during the vegetative growth cycle, spore germination and spore formation, mode of action of agriculturally important fungicides, and the physiology of fungal-induced plant pathogenesis. (Same course as BY 554.)
565. POSTHARVEST PATHOLOGY (3). LEC. 3. Pr., PLP 309 or HF 308. Fall, even years. Nature, cause, control and factors influencing pathology of agricultural crops after harvest.

### Political Science (PO)

Professors Becker, Head, Dickson, Martin, Nelson and O'Toole  
Associate Professors Barrow, Burns, Gryski, Heilman, Johnson, Latimer,  
Montjoy, Ward and Zuk  
Assistant Professors Budde, Ford, Kelly, Pendergast and Widell  
Instructors Cannon and Maffet  
Adjunct Abbett

209. INTRODUCTION TO AMERICAN GOVERNMENT (5). Constitutional principles; federalism; elections and public opinion; legislative, executive and judicial departments; principal functions.
210. AMERICAN STATE AND LOCAL GOVERNMENT (5). State constitutional principles; organization and functions of state government; national-state and state-local relations; special attention to Alabama government.
260. SURVEY OF LAW ENFORCEMENT (5). Pr., sophomore standing. (Same as LE 260.) Introduction to the philosophical and historical backgrounds; agencies and processes; purposes and functions; administration and technical problems; career orientation.
271. HONORS POLITICAL SCIENCE (5). Pr., admission to Auburn University Honors Program. Selected themes in American politics at the national, state and local levels.
300. POLITICAL SCIENCE RESEARCH METHODS (5). Pr., PO 209 or 210 and sophomore standing. Introduction to empirical research methods in political science with attention to computer applications.
302. INTRODUCTION TO POLITICAL THOUGHT (5). Pr., sophomore standing. Selected major themes in political thought from ancient to modern times.
308. INTRODUCTION TO INTERNATIONAL RELATIONS (5). Pr., sophomore standing. International relations, including a consideration of the bases of national power and the rudiments of international politics.
311. INTERNATIONAL ORGANIZATION (5). Pr., sophomore standing. The evolution of international organization from the beginning through the United Nations.
312. INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS (5). Pr., sophomore standing. Methods of classifying governments by institutional and developmental characteristics. A review of the forces which create political stability and instability, democracy and dictatorship; contemporary political systems in selected countries will be used for comparison.
314. AMERICAN FOREIGN POLICY (5). Pr., sophomore standing. Analysis of the decision-making process of American foreign policy and of selected current issues of American foreign policy.
315. AMERICAN POLITICAL THOUGHT (5). Pr., sophomore standing. The principal American political philosophers and philosophies and their influence on political institutions.
316. NATIONAL SECURITY AND FOREIGN POLICY (3). Pr., sophomore standing. Introduction to national security aspects of United States foreign policy.
318. LATIN AMERICA AND THE UNITED STATES (3). An analysis of Latin American-United States relations in their political, social and economic aspects.
320. INTERGOVERNMENTAL RELATIONS (3). Pr., PO 209 or 210 and sophomore standing. Relationships between units of local, state and national governments in structural and policy areas; federalism in theory and practice.
323. MUNICIPAL GOVERNMENT IN THE UNITED STATES (5). Pr., PO 210 and sophomore standing. Functions of city government, relation of city to state; electorate, party system and popular control; forms of government; administrative organizations; some reference to Alabama.
325. INTRODUCTION TO PUBLIC ADMINISTRATION (5). Pr., sophomore standing. Organization, development, procedures, process, and human factors involved in administration in a political environment.
326. THEORY OF PUBLIC ORGANIZATION (5). Pr., PO 325 and sophomore standing. The structure and functioning of governmental organizations with an emphasis on theories of administrative hierarchies and evaluation of bureaucracy.
327. POLICY PROCESS (5). Pr., sophomore standing. The formulation and implementation of public policy; the roles of the major governmental institutions in policy making.
328. GOVERNMENT AND THE ECONOMY (5). Pr., PO 325 and sophomore standing. An examination of constitutional and political bases of governmental action; the origin and evolution of policies; relationships between political and economic institutions; and the consequences of governmental action or inaction.



329. THE AMERICAN PRESIDENCY (5). Pr., PO 209, sophomore standing. The President as legislative leader, chief executive, chief diplomat, and commander-in-chief. Political styles and personalities of recent presidents. Presidential decision-making.
330. INTRODUCTION TO PUBLIC LAW AND CONFLICT RESOLUTION (5). Pr., sophomore standing. Theoretical and comparative survey of historical and contemporary methods of resolving individual and group conflicts.
331. THE LEGISLATIVE PROCESS (3). Pr., PO 209 or 210, sophomore standing. The principles, procedures and problems of lawmaking in the United States; special attention to Congress and the state legislatures.
332. THE JUDICIAL PROCESS (3). Pr., sophomore standing. The role of the courts; the nature of the jurisprudence; comparative legal systems; the origin of law; and the concept of legality.
333. ADMINISTRATIVE RESPONSIBILITY (3). Pr., PO 325 and sophomore standing. Roles and functions of public administration in a democratic society. Emphasis on bureaucratic ethics.
336. CRIMINAL JUSTICE (3). Pr., sophomore standing. An in depth examination of the various procedural due process rights of the Constitution as they relate to the criminal processes — historical development, modern interpretations and further trends.
340. POLITICAL PARTIES AND POLITICS (5). Pr., PO 209, sophomore standing. The nature, organization, and operation of political parties in the United States; the suffrage; nominating and electoral processes; importance and nature of interest groups.
341. PRESSURE GROUPS (3). Pr., sophomore standing. Major private associational groups affecting public policy in the United States. Special attention to their structures, funding, public regulation and political activities.
342. POLITICS AND THE MEDIA (5). Influences of the media (broadcast and printed) on political action, the electoral process and popular concepts of political institutions; "use" of the media and its regulation by government.
390. BASIC MEDIATION PRACTICE (3). Pr., sophomore standing. Theory and practice of mediation as a major form of conflict resolution.
407. INDEPENDENT STUDY (1-5). Pr., junior standing and COI. Independent study and research, directed by a faculty member.
410. ADMINISTRATION AND MANAGEMENT OF RECORDS (3). Pr., sophomore standing. The principles and use of records management in the systematic analysis and scientific control of the life cycle of governmental, business and university records in terms of quantity, quality and cost.
412. COMPARATIVE CRIMINAL JUSTICE SYSTEMS (5). Pr., PO 209 and PO/LE 260, or PO 312. Institutional comparison, social control problems and policies, and functional analysis of the criminal justice systems or democratic, authoritarian, and totalitarian governments in selected countries with emphasis on policing, the judiciary and the law.
415. JUVENILE JUSTICE (5). Pr., SY 201 or COI. Analysis of the juvenile justice system with special emphasis on some of the unique issues and problems that are involved in the adjudication and rehabilitation of juvenile offenders. Credit for SCR 415 precludes credit for PO 415.
450. INTERNSHIP (5-10). Pr., PO, PUB or HA major and junior standing. (S-U grading only.) Practical political or administrative experience in public agencies or related activities arranged and approved by the department.
451. INTERNSHIP READING COURSE (5). Coreq., concurrent enrollment in PO 450. COI. Content of reading by agreement of student and instructor. Not open to graduate students.
471. HONORS READINGS COURSE (3-5). Pr., admission to the Auburn University Honors Program or the Political Science Department Honors Program. May be repeated for a maximum of six hours but a student may earn no more than a combined total of nine credit hours in PO 471 and 472. Honors students taking an internship should select this course in lieu of PO 451.
472. HONOR RESEARCH AND THESIS (1-3). Pr., admission to the Auburn University Honors Program or the Political Science Department Honors Program. May be repeated to a maximum of six hours but a student may earn no more than a combined total of nine credit hours in P O 471 and 472.
475. SPECIAL TOPICS IN POLITICAL SCIENCE (3). Pr., PO 209. Review of selected Political Science topics.

### ADVANCED UNDERGRADUATE AND GRADUATE

501. AMERICAN CONSTITUTIONAL LAW I (5). The constitution of the United States on the basis of the decisions and opinions of the Supreme Court defining judicial review, the relationship of the executive, legislative and judicial branches of the national government and the federal system.
502. AMERICAN CONSTITUTIONAL LAW II (5). The Constitution of the United States on the basis of the leading decisions and opinions of the Supreme Court defining civil rights in relation to both national and state governments.
503. AMERICAN CONSTITUTIONAL LAW III (5). Supreme Court opinions defining voting rights, gender discrimination, race discrimination, age discrimination, affirmative action and the right to privacy.
504. AMERICAN CONSTITUTIONAL LAW IV (5). Supreme Court opinions defining due process in national and state administration of criminal justice and juvenile justice.
505. METROPOLITAN AREA GOVERNMENTAL PROBLEMS (3). Political, governmental, and administrative organization and actions in urban areas with many governmental entities; governmental problems resulting from urbanization and possible solutions.
514. FINANCIAL ADMINISTRATION (5). Pr., PO 325. Theory and practice of budgeting and the review of government financial documents.
515. PUBLIC PERSONNEL ADMINISTRATION (3). Pr., PO 325. Personnel policies and processes of national, state and local governments. The role of politics in public personnel management.

517. LABOR RELATIONS IN PUBLIC ORGANIZATIONS (3). Pr., PO 515 or MN 442. The background, legal and constitutional aspects and administration of group negotiations and collective bargaining in public employment. Credit for this course precludes credit for MN 517.
518. ADMINISTRATIVE LAW (5). Pr., PO 325 and PO 501 or 502. General nature of administrative law; types of administrative action and enforcement; analysis of rule-making and adjudication; administrative due process; judicial review. Case method.
519. PROBLEMS IN PUBLIC ADMINISTRATION (3-5). Pr., COI, senior or graduate standing. Review of selected problems in public administration through readings, case studies and individual research projects.
521. POLITICAL BEHAVIOR (5). Pr., PO 300 or COI. An analysis of the processes of political attitude formation. Special emphasis on the development and testing of empirical theories of political culture, political socialization process, public opinion formation and participation.
523. COMMUNIST THEORY AND PRACTICE (3). Marxist theory, its Leninist version and recent revisions in Western Europe, along with illustrations of actual practice drawn from all sides of the communist world.
526. GOVERNMENTS OF WESTERN EUROPE (5). Descriptions and analyses of the principal political structures and power systems of Western Europe with particular emphasis upon Great Britain, France and Germany.
533. GOVERNMENT AND POLITICS OF THE FAR EAST (5). The political environment, institutions, and processes of the Far East, with emphasis on China and Japan; also foreign relations of the area including Great Power interests.
535. CONTEMPORARY INTERNATIONAL POLITICS (5). A survey of the conflicts of national interests in contemporary international politics with special emphasis on the efforts to resolve these issues through diplomacy. Gives students the opportunity to apply their academic training to an analysis of actual contemporary international issues.
536. GOVERNMENT AND POLITICS OF THE SOVIET UNION (5). The present status of the Soviet totalitarian system with attention to its origin, the essentials of the Stalinist pattern, the post-Stalinist political dynamics and the nature and significance of contemporary changes.
537. SOVIET FOREIGN POLICY (5). The factors affecting Soviet foreign policy as seen in historical perspective, with emphasis on the post-war Stalinist practices and the modifications made by the post-Stalin leadership.
538. GOVERNMENT AND POLITICS OF EASTERN EUROPE (5). A comparative study of the political institutions of the Eastern European Communist states, emphasizing especially those features which diverge the most from the totalitarian pattern of the Stalinist era. Attention will also be given to the foreign relations of the Eastern European powers, including those with the Soviet Union and Communist China.
539. GOVERNMENT AND POLITICS OF LATIN AMERICA (5). The political environment, institutions and processes of Latin America with emphasis on dynamic factors that influence the degree of democracy and authoritarianism, stability and instability and politico/economic development in the area.
540. INTERNATIONAL LAW (5). The origin and development of international law with special emphasis on recent and current developments - trends.
552. PROGRAM EVALUATION FOR POLITICAL SCIENTISTS AND PUBLIC ADMINISTRATORS (5). Pr., PO 300 and junior standing. Theory and practice of action program evaluation in the public sector with attention to program planning, process assessment and impact assessment.

### Poultry Science (PH)

Professors Brewer, Head, Eckman, Giambrone, McDaniel, Mora,  
Moran, Renden and Roland  
Adjunct Professor Sexton

Associate Professors Johnson and Ewald

Assistant Professors Bilgili, Blake, Conner and Lien

201. POULTRY SCIENCE (4). LEC. 3, LAB. 2. Fall, Spring. Principles of poultry production, including breeding, feeding, housing and diseases.
401. JUNIOR-SENIOR SEMINAR (1). Pr., junior standing. Fall. Experience in analyzing and presenting assigned subjects relative to the poultry industry.
402. POULTRY SCIENCE INTERNSHIP (5-15). COI, S-U graded, Fall, Winter, Spring, Summer. To provide students with practical on-the-job training in the poultry business.
- 407-409. SUPERVISED AVIAN INVESTIGATIONS (3-3). LEC. 1, LAB. 4. Pr., junior standing and COI. All quarters. Investigation of some phase of avian science of interest to the student.

### ADVANCED UNDERGRADUATE AND GRADUATE

501. COMMERCIAL MEAT PRODUCTION (4). LEC. 3, LAB. 3. Winter, even years. Principles of management of commercial poultry meat production with major emphasis on broiler production.
502. COMMERCIAL EGG PRODUCTION (3). Winter, odd years. Principles of management of commercial egg production, processing and marketing.
505. POULTRY FEEDING (5). LEC. 4, LAB. 2. Pr., PH 201. Fall, odd years. Composition and use of poultry feeds in connection with the demands for body growth, body maintenance and egg production.
506. POULTRY BREEDING, FERTILITY AND HATCHABILITY (5). LEC. 4, LAB. 2. Pr., PH 201 ZY 300 or COI. Spring, even years. Breeding systems used in developing modern breeds of poultry. Genetic and environmental factors affecting fertility, embryonic development and hatchability.

508. CONTROL OF POULTRY DISEASES AND PARASITES (4). LEC. 3, LAB. 2. Spring, even years. Prevention, diagnosis, control and treatment of the common diseases of poultry.
511. PROCESSING AND MARKETING (4). LEC. 3, LAB. 2. Pr., PH 502 or COI. Spring, even years. Problems involved in processing and marketing poultry meat and eggs.
515. AVIAN REPRODUCTION AND ENVIRONMENTAL PHYSIOLOGY (4). LEC. 4, Pr., ZY 316. Winter, even years. Reproductive processes and physiological responses to environmental stimuli in domestic poultry.
583. PRACTICUM (1-5). May be repeated not to exceed 10 hours credit. Not open to majors in Poultry Science. Provides students with experience in Poultry Science closely relating theory and practice, usually carried on simultaneously.

### Psychology (PG)

Professors Hopkins, Head, Burkhardt, Gynther, Harzem, Johnston,  
Lewis, McGlynn, Schaeffer, Tucker and Vuchinich  
Associate Professors Buskist, McCoy and Newland

Assistant Professors El-Sheikh, Fleming, Perlow, Rosenfarb and Shapiro

211. PSYCHOLOGY (5). Introduction to the field of behavior.
212. DEVELOPMENTAL PSYCHOLOGY (5). Introduction to cognitive, social and emotional development across the life span.
213. PSYCHOLOGY OF ADJUSTMENT (5). The dynamics of normal interpersonal relationships and personal adjustment. Does not count toward the major in psychology.
300. INTRODUCTION TO CLINICAL AND COMMUNITY PSYCHOLOGY (3). Pr., PG 211. Introduction to theory and methods of clinical and community psychology.
301. PSYCHOLOGY IN THE CRIMINAL JUSTICE SYSTEM (5). LEC. 4, LAB. 2. Pr., PG 211. Introduction to theory, research, and applications of psychological principles in the criminal justice system.
302. PSYCHOLOGICAL ASPECTS OF DEATH AND DYING (3). Pr., sophomore standing. A survey of psychological literature on dying, death and grief.
314. PSYCHOLOGY AS A SCIENCE (3). Introduction to the use of the scientific method in psychology.
315. QUANTITATIVE METHODS (5). LEC. 3, LAB. 4. Pr., PG 211 and MH 140 or equivalent. Introduction to the measurement of behavior and to quantitative methods of data analysis.
320. EXPERIMENTAL PSYCHOLOGY I: LEARNING (5). LEC. 3, LAB. 3. Pr., PG 211 and 315. Concepts, problems and experimental techniques in learning.
321. EXPERIMENTAL PSYCHOLOGY II: SENSORY PROCESSES (5). LEC. 3, LAB. 3. Pr., PG 211 and 315 or departmental approval. Discrimination, generalization and their physical and psychological correlates.
322. EXPERIMENTAL PSYCHOLOGY III: PERSONALITY (5). LEC. 3, LAB. 3. Pr., PG 320. Introduction to personality with emphasis placed on the nature, description, dynamics and determinants of personality.
330. EXPERIMENTAL PSYCHOLOGY IV: SOCIAL (5). LEC. 4, LAB. 2. Pr., PG 211 or SY 201 and PG 212 or SY 204 or SW 375. Introduction to the field of social psychology. Laboratory work relating to investigation of social psychological problems, data collection and analysis and report writing.
350. BEHAVIOR MODIFICATION IN EARLY CHILDHOOD (5). LEC. 3, LAB. 4. Pr., departmental approval. Application of learning principles to the modification of behavior in the preschool child. Laboratory practice will supplement classroom discussion.
412. ADVANCED DEVELOPMENTAL PSYCHOLOGY (5). Pr., PG 212 and 314 or COI. Advanced topics in developmental psychology selected from among cognitive, emotional and social processes in child and/or life-span development.
420. PSYCHOLOGY OF WOMEN (5). Pr., junior standing. Women from a psychological point of view covering stereotypes, roles and origins of sex differences.
431. SOCIAL PSYCHOLOGY (5). Pr., departmental approval, junior standing. Social psychological processes and theories of social behavior.
433. PERSONALITY (5). Pr., 10 hours of psychology or departmental approval. Objective, phenomenological and psychoanalytic theories of personality.
435. ABNORMAL PSYCHOLOGY (5). Pr., 10 hours of psychology or departmental approval. Types of abnormal behavior and their social and biological origins. Opportunities for field trips.
440. PHYSIOLOGICAL PSYCHOLOGY (5). Pr., PG 320 and 321 or departmental approval. The physiological correlates of behavior.
444. PSYCHOLOGICAL ASPECTS OF SEXUAL BEHAVIOR (5). Pr., junior standing. Human sexuality from a psychobiological perspective.
450. LEARNING (5). Pr., PG 320 or departmental approval. Theories of learning and their logical and empirical foundations.
465. PSYCHOLOGY AND DESIGN (5). Principles of psychology relating to the design of equipment and environments.
480. HISTORY OF PSYCHOLOGY (5). Pr., 20 hours of psychology or departmental approval. Evolution of psychology from physics, physiology and philosophy to a science of behavior.

ADVANCED UNDERGRADUATE AND GRADUATE

507. MATURITY AND AGING (5). Pr., PG 212. Development psychology relating to changes in and problems of human maturity from early adulthood to old age.
515. INTRODUCTION TO THEORY OF MEASUREMENT (5). Pr., PG 315 or departmental approval. Theories of measurement and psychological testing with examples of their applications.
516. PSYCHOLOGICAL TESTING (5). LEC. 3, LAB. 8. Pr., PG 515 or departmental approval. Issues and applications of group assessment techniques.
530. PERCEPTION (5). Pr., PG 321 or departmental approval. Theories of perception, emphasizing both general and individual factors that influence meaning.
534. PSYCHOLOGY OF EXCEPTIONAL CHILDREN (5). Pr., PG 212. Psychological aspects of handicapped and gifted children.
536. PSYCHOLOGY OF ABNORMAL CHILDREN AND ADOLESCENTS (5). Pr., PG 212. Introduction to cognitive, emotional and behavioral disturbances in children and adolescents.
545. ANIMAL BEHAVIOR (5). Pr., PG 320 and 321 or departmental approval. Analysis of unlearned and learned animal behavior and its evolutionary development, integrating the contributions of ethological and behavioristic research.
555. HUMAN LEARNING AND MEMORY (5). Pr., PG 320 or departmental approval. Survey of research methodology, empirical data and theoretical interpretations relevant to the acquisition, retention and forgetting of verbal concepts and verbal materials.
557. TECHNIQUES AND APPLICATIONS OF BEHAVIOR THERAPY (5). Pr., PG 320 or 350 and departmental approval. Analysis of empirically derived therapeutic procedures and their application to socially and clinically relevant behavior.
561. INDUSTRIAL PSYCHOLOGY (5). The uses of psychology in business and industry.
562. TRAINING AND SUPERVISION OF INDUSTRIAL PERSONNEL (3). Application of the principles of learning to the training of factory, office and sales employees.
563. INTERVIEWING AND CLASSIFYING INDUSTRIAL PERSONNEL (3). Principles and practices in interviewing.
590. INDEPENDENT STUDY (1-5). Pr., departmental approval. An individual problems course. Each student will work under the direction of a staff member on some experimental or theoretical problem of mutual interest. May be repeated for a maximum of 15 hours, but only 10 hours will count toward the major in psychology.
595. SEMINAR IN PSYCHOLOGY (1-5). Pr., departmental approval. Seminars on research and theory in various areas of psychology.

Rehabilitation and Special Education (RSE)

Professors Browning, Head, Eaves and Simpson

Associate Professors Couch, Darch, Diebold, McDaniel, McLean and Wood

Assistant Professors Baird, Brown and Tomlin

Instructor Haynes

RSE Continuing Education Coordinator Cosgrove

Extension Associates Carruth, Houston-Guin, Locklin, McClanahan, Pell and Peterson

B.S. in Ed., M.Ed., M.S. in Ed., Ed.S., and Ph.D. degrees are offered in the Department of Rehabilitation and Special Education. At the Bachelor's and Master's degree levels in Special Education, students are prepared for positions as teachers or clinicians in public schools and other agencies which serve exceptional children and youth. The Bachelor's and Master's degree programs in Rehabilitation prepares students for positions as vocational rehabilitation specialists, vocational evaluation specialists and rehabilitation facility administrators in public schools and other agencies serving exceptional youth and adults. The goal of the Ed.S. and Ph.D. programs is to prepare advanced graduate students to assume leadership positions in the areas of university teaching, research and administration of direct service programs for exceptional children and adults.

In the following RSE courses, the (\*) denotes the course is offered only to participants in training programs for workshops and facility personnel in State and Regional offices of Vocational Rehabilitation. The (\*\*) denotes that certain sections of common offerings are identified by use of letter designations as noted: (H) Mild Learning Handicapped, (L) Learning Disabilities, (M) Multihandicapped, (N) Speech-Language Pathology, (O) Emotional Disturbance, (P) Mental Retardation, (Q) General Rehabilitation and Special Education, (R) Rehabilitation and (S) Early Childhood Education for the Handicapped.

102. ORIENTATION FOR TRANSFER STUDENTS\*\* (1). Helps transfers from other curricula and students outside the dual objectives program to understand teacher education and teaching as a profession.
104. ORIENTATION TO LABORATORY EXPERIENCES FOR TRANSFER\*\* (1).

300. CURRICULUM PLANNING FOR THE HANDICAPPED CHILD (N-4) (5). LEC. 4, LAB. 2. Pr., admission to Teacher Education, RSE 376, RSE 377 or RSE 378 or equivalent. Provides students with an understanding of a functionally/developmental approach to the selection, development, implementation and evaluation of appropriate curriculum activities for the instruction of mildly, moderately, and severely handicapped children, N-4. Content includes individualized and group approaches to curriculum.
301. CURRICULUM PLANNING FOR THE HANDICAPPED CHILD, GRADES 5-12 (5). LEC. 4, LAB. 2. Pr., admission to Teacher Education, RSE 376, RSE 377 or RSE 378 or equivalent. The design and implementation of appropriate curriculum modes for the handicapped in grades 5-12.
330. CAREERS IN REHABILITATION SERVICES (5). History, legal basis and fields of rehabilitation services. Exploration of specialty fields in medical and vocational rehabilitation such as occupational and physical therapy, speech pathology, social work, vocational evaluation, adjustment services and rehabilitation counseling. Emphasis on those working with disabled persons and adjustment to disability.
375. INTRODUCTION TO REHABILITATION AND SPECIAL EDUCATION (5). Pr., for RSE majors only or COI. Introduction to the various areas of exceptionality with emphasis on the historical and research base associated with providing services to exceptional people.
376. SURVEY OF EXCEPTIONALITY (5). Pr., for non-RSE students majoring in the various fields of education. An introduction to the major categories of exceptionalities with an emphasis upon the educational and training implications of each.
377. INTRODUCTION TO MENTAL RETARDATION (5). Pr., RSE 376 or COI. An introductory exploration of mental retardation as a special type of exceptionality with emphasis placed upon implications for the education and training of the retarded.
378. AN INTRODUCTION TO BEHAVIOR DISTURBANCE (5). Pr., RSE 376 or COI. An introductory exploration of behavior disturbance as a special type of exceptionality with emphasis placed upon implications for the education and training of the behavior disturbed.
414. ASSESSMENT TECHNIQUES IN REHABILITATION (3). LEC. 2, LAB. 2. Pr., admission to Teacher Education and FED 320 or equivalent. Program planning principles involved in designing program activities for specific areas of specialization.
415. TEACHING AND BEHAVIORAL CHANGE IN REHABILITATION (3-5). LEC. 2, LAB. 2. Pr., admission to Teacher Education and FED 320 or equivalent. Understanding of curriculum content, methods and techniques of instruction using appropriate instructional materials, planning and evaluation of instruction for specific areas of specialization.
420. ORGANIZING INSTRUCTION FOR SPECIAL EDUCATION\*\* (5). LEC. 4, LAB. 4. Pr., RSE 376, 378 or COI. Provides the student with skills necessary to organize the special education instructional program in area of specialization.
421. EDUCATIONAL DIAGNOSIS AND ASSESSMENT IN SPECIAL EDUCATION \*\* (5). LEC. 4, LAB. 2. Pr., FED 400. Application of concepts in measurement and evaluation in education: Selection/Construction of instruments, collection, summation and interpretation of diagnostic/assessment data. Emphasis is on diagnostic/assessment instruments most appropriate for referred exceptional students.
425. PROFESSIONAL INTERNSHIP\*\* (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods designed to provide positive evaluation and analysis of the Intern experience.
448. DIRECTED INDEPENDENT STUDY\*\* (1-10). The student's learning efforts are guided toward desired objective. Includes evaluation by professor and student of work accomplished at regular intervals.
450. SPECIAL TOPICS\*\* (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations.
479. METHODS AND MATERIALS FOR TEACHING IN SPECIAL EDUCATION\*\* (5). Pr., RSE 375 or 376 and 420.
495. PRACTICUM\*\* (1-10). Provides experiences closely relating theory and practice, usually carried on simultaneously.

### ADVANCED UNDERGRADUATE AND GRADUATE

505. NATURE AND NEEDS OF THE GIFTED AND TALENTED (4). Provides opportunities for students to develop knowledge about the field of gifted education and awareness of the nature and needs of high ability children. Emphasis on history, philosophy and underlying assumptions of gifted education, identification and characteristics of high ability children.
510. OCCUPATIONAL INFORMATION (3). LEC. 2, LAB. 2. Pr., junior standing. (Also listed as VED 510.)
529. LEARNING DISABILITIES (5). Pr., RSE 375 or 376 or 600 or COI, junior standing. Theoretical issues, research, diagnosis and educational approaches involved with children with learning disabilities. Observations of educational settings for children with learning disabilities are required.
530. EVALUATION AND TRAINING IN VOCATIONAL REHABILITATION\* (4). LEC. 3 HOURS DAILY FOR 6 WEEKS, INTERNSHIP 4 WEEKS. Pr., junior standing. Purposes, principles and techniques of client evaluation and training, including personal, social and physical adjustment, vocational choice and selected techniques used in the evaluation and training process.
531. RESEARCH IN EVALUATION AND TRAINING IN VOCATIONAL REHABILITATION\* (4). LEC. 3 HOURS DAILY FOR 6 WEEKS, INTERNSHIP 4 WEEKS. Pr., junior standing. A problem using research techniques, to be selected in consultation with the supervising professor.
532. INSTRUCTIONAL PROGRAMS IN WORKSHOPS AND REHABILITATION FACILITIES\* (5).



533. MANAGEMENT OF VOCATIONAL REHABILITATION WORKSHOPS AND FACILITIES\* (5).
535. INTRODUCTION TO VOCATIONAL EVALUATION (5). Pr., junior standing. History, philosophy, theoretical bases and present status of vocational evaluation. Survey of the vocational evaluation process, principles, techniques and procedure. Innovative methodology and future trends in vocational evaluation are explored.
536. SYSTEMS OF VOCATIONAL EVALUATION (3). LEC. 1, LAB. 4. Pr., VED 535, junior standing. Instruction and supervised practice in the application of the GATB, the JEVS system, the TOWER system, the Singer/Graflix system and related techniques of vocational evaluation.
537. OCCUPATIONAL ORIENTATION FOR THE DEVELOPMENTALLY DISABLED (5.) Pr., junior standing. Principles for providing occupational orientation and work experience techniques of curriculum planning, job classification and evaluation, selection, and placement, curricular activities related to work experience, community agencies and public relations.
538. WORK ADJUSTMENT IN REHABILITATION (5). Pr., junior standing. 10 hrs. Psychology, 10 hrs. Rehab. Introduction to the history, development, theoretical base and techniques of work adjustment in rehabilitation.
540. INTRODUCTION TO MANUAL COMMUNICATION WITH THE DEAF (4).
541. AMERICAN SIGN LANGUAGE (4). Pr., COI.
542. SURVEY REHABILITATION WITH THE BLIND AND VISUALLY HANDICAPPED (4).
543. VOCATIONAL EVALUATION AND ADJUSTMENT OF BLIND AND VISUALLY HANDICAPPED (4).
544. SURVEY OF REHABILITATION WITH DEAF AND HEARING IMPAIRED (4).
546. VOCATIONAL EVALUATION OF DEAF AND HEARING IMPAIRED (4).
549. SYSTEMS OF VOCATIONAL EVALUATION FOR THE RETARDED (3). LEC. 1, LAB. 4. Pr., RSE 535, junior standing. Instruction and supervised practice in the development, evaluation and application of commercial systems of vocational evaluation for use with the mentally retarded.
550. LANGUAGE DEVELOPMENT FOR THE YOUNG HANDICAPPED CHILD (5). Pr., junior standing and COI. A systematic approach to intervention programming for communication development with handicapped children.
556. LEARNING RESOURCES IN AREA OF SPECIALIZATION\*\* (4). Pr., junior standing.
580. EDUCATION OF CHILDREN WITH SPECIAL LEARNING DISABILITIES (5). Pr., RSE 375 or 376, 529, junior standing and COI. Existing theories and instructional programs for children with special learning disabilities. Administrative arrangements, classroom management, individual educational evaluation and programming are emphasized.
585. THE MODERATELY MENTALLY RETARDED (3). The child functioning in the moderate mental retardation range with emphasis upon the implications for the education and training for this population.
586. THE SEVERELY MULTIPLY HANDICAPPED (3). Children and youth functioning at the severe or profound mental retardation level with concomitant problems, such as behavior, sensory and physical handicaps. Emphasis will be on identification and educational programming.
587. PARENT EDUCATION FOR HANDICAPPED CHILDREN (4). Pr., RSE 375 or 376. Provides students with an understanding of the concerns of families with handicapped children and program options and techniques for effective communication with family members.
588. EDUCATIONAL APPROACHES WITH HANDICAPPED INFANTS AND TODDLERS (4). Pr., 375 or 376. Provides students with an understanding of the developmental stages in infancy through two years, activities appropriate at each stage and techniques for stimulating the child who is not developing at the normal rate.

## Religion (RL)

Professor Penaskovic, *Head*  
Associate Professor Dawsey

201. INTRODUCTION TO RELIGION (3). Major themes in religion, including religious experience, religion and society and the diversity of religion. Examples from various religious traditions.
210. INTRODUCTION TO THE OLD TESTAMENT (5). Historical-critical study of the Old Testament in its cultural setting. Emphasis on development of Old Testament thought.
220. INTRODUCTION TO THE NEW TESTAMENT (5). Historical-critical study of the New Testament in its cultural setting. Major issues in New Testament study.
230. HISTORY OF CHRISTIANITY (3). Development of Christianity from 100 A.D. to the present. Major personalities, events and movements.
245. THE CURRENT RELIGIOUS SCENE (5). Religious themes and developments in contemporary American life.
250. INTRODUCTION TO SPIRITUALITY (4). Spiritual growth and development in the context of the major world religions.
260. INTRODUCTION TO JUDAISM (3). Treats the biblical beginnings of the Jews, focusing on the Scriptures, the calendar, etc.
290. THE HOLOCAUST (3). Examines the history, theology and psychology of the Holocaust, the mass extermination of Jews by the Nazis.
300. THE FIRST CHRISTIANS (3). Literature, thought and practices of earliest Christianity.
301. WORLD RELIGIONS (5). Hinduism, Buddhism, Taoism, Confucianism and Islam, with secondary attention to other Asian religions.
320. JESUS (5). Pr., RL 220. Jesus as portrayed in the New Testament and subsequent interpretations.
325. PAUL (5). Pr., RL 220. Life, letters and thought of the Apostle Paul.

340. RELIGION IN AMERICA (5). Religious activities, institutions and personalities in North America from the Colonial Period to the present.
350. 20TH CENTURY RELIGIOUS THOUGHT (5). Pr., one course in religion. Major 20th century theologians — Protestant, Catholic, Jewish.
450. SEMINAR (3-5). Pr., RL 201. An intensive examination of a major topic in religious studies.
480. READINGS IN RELIGION (3-5). Pr., junior standing and COI. A program of independent study on a special topic. May be repeated for credit.

### Sociology (SY), Anthropology (ANT) and Social Work (SW)

Professors Mohan and Starr

Associate Professors Popple, *Acting Head*, Adams, Busch, Cottier, Fauple,

French, Gundlach, Kowalski and Wilke

Assistant Professors Hanke and Petee

Instructors Meyers and Pike

Joint appointees: Professors Dunkelberger and Molnar

#### SOCIOLOGY (SY)

201. INTRODUCTION TO SOCIOLOGY (3). Principles and processes of society. Open to freshmen.
202. SOCIAL PROBLEMS (5). Pr., SY 201. A sociological analysis of current social problems such as crime, mental illness, race relations, poverty, aging, etc.
203. POPULATION AND SOCIETY (5). A survey of theories and research on how the demographic processes interact with such social institutions as the economy, education, family, medicine, science and technology.
204. SOCIAL BEHAVIOR (5). Pr., SY 201 or PG 211. Integrated social psychological factors which influence or determine human behavior; the emphasis is upon the normal individual and/or group situations.
220. STATISTICS (5). Pr., SY 201. Basic statistical concepts, measures, and techniques used in sociological reports and research.
301. SOCIOLOGY OF THE FAMILY (5). Pr., SY 201. The American family in perspective. Theory and method in sociological studies of the family.
304. MINORITY GROUPS (5). Pr., junior standing. Racial composition of the United States with special emphasis on the adjustment of minority groups to the core society.
350. SOCIOLOGY COLLOQUIUM (1). Pr., SY 201. Designed to orient sociology majors toward major substantive fields of the discipline. May be repeated for maximum of three credit hours.
360. INTRODUCTION TO SOCIAL EPIDEMIOLOGY (5). Pr., SY 201. The influence of social conditions and demographic characteristics upon health and well-being, emphasizing social aspects of major diseases and other problems such as mental disorders, suicide, homicide, divorce and family violence.
370. METHODS OF SOCIAL RESEARCH (5). Pr., SY 201 or RSY 361. The principal methods of data collection and analysis in sociological research. Same as RSY 370. Credit in RSY 370 precludes credit in SY 370.
409. SOCIAL THOUGHT (5). Pr., SY 201 or COI. Focus on pre-Comtian ideas bearing on the definition and emergence of social and behavioral theory.
411. SOCIAL CHANGE (5). Pr., SY 201 or COI. Major theoretical and research perspectives in social and developmental change.
477. SOCIOLOGY OF AGING (3). Pr., SY 201. A social-cultural treatment of the phenomena of aging emphasizing recent theory and research.
478. SEMINAR IN SOCIOLOGY OF LAW (3). Pr., SY 201, junior standing. The structure and functioning of the American legal system analyzed with cross-cultural comparisons and institutional interrelations examined. Case method approach is used.

#### ADVANCED UNDERGRADUATE AND GRADUATE

502. SOCIAL THEORY (5). Pr., SY 201 or COI. Survey of theorists from Comte to the present; emphasizes theory construction, theoretical analysis and differences in theoretical approaches.
504. SOCIOLOGY OF POWER (5). Pr., SY 201. A systematic concern with the dimensions and distribution of power in social life.
505. URBAN SOCIOLOGY (5). Growth and decline of cities with special emphasis on ecological and demographic characteristics, associations and institutions, class systems and housing and city planning.
507. PUBLIC OPINION AND PROPAGANDA AND MEDIA (5). Pr., SY 201. A survey of social communication emphasizing the formation, use and assessment of publics, ideologies and opinions in mass society.
508. INDUSTRIAL SOCIOLOGY (5). Pr., SY 201. The sociological approach to business organization and industrial relations. Emphasis given to organization principles operative in the economic life within a social system such as a factory or business establishment.
509. SOCIOLOGY OF RELIGION (5). Pr., SY 201 or COI. Analysis of religion as a social institution as found in the world's great religions.
511. THIRD WORLD DEVELOPMENT (3-5). Pr., SY 201 or COI. Major theoretical perspectives and research accomplished concerning efforts to promote the social and economic development of the Third World countries.

514. FIELD INSTRUCTION (1-10). Pr., COI. Supplementary instruction concurrent with experience in some field of work involving application of sociological perspectives to community life. May be repeated for a maximum of 10 hours credit.
515. SOCIAL STRATIFICATION (5). Pr., SY 201. Stratification as a fundamental feature of all societies. Past thought and current research and theory on structured social inequalities is systematically developed.
518. SOCIOLOGY OF OCCUPATIONS (5). Pr., SY 201. A comprehensive examination of specific occupational categories ranging from professional to service occupations. Special emphasis is placed on the relationship of occupational structure and institutions and the meaning of occupations for individuals and society.
520. RACIAL AND ETHNIC RELATIONS (5). Pr., 10 hours of SY or COI. Utilizes cross-cultural data to describe situations in which race or ethnicity affect human behavior. These data interpreted by delineating patterns, trends and relationships.
522. SPECIAL TOPICS IN SOCIOLOGY (1-5). Pr., SY 201 or COI. Examines selected topics from a sociological perspective. May be repeated for a maximum of 10 hours.
525. SEMINAR IN SOCIAL DEVIANCE (5). Pr., SY 201 or COI. Analysis of factors in the creation of and reaction to social deviance. Examines various theoretical approaches to deviance, with particular emphasis on how behavior comes to be defined as deviant.
534. SOCIALIZATION (5). Pr., SY 201. Examines an important and distinct sociological tradition: mind, self, society and interaction as symbolic phenomena grounded in social processes. Covers major intellectual influences, concepts and figures (e.g., James, Mead, Cooley).
550. DIRECTED READING (1-5). Pr., COI. An independent reading program, under supervision, to provide for the pursuit of specific interests in sociology not covered by other course offerings. May be repeated for a maximum of 10 hours credit.
577. SEMINAR IN MEDICAL SOCIOLOGY (5). Pr., SY 201 or COI. The nature and organization of medical practice and health delivery systems. Special attention to role of physicians and various views of patients and disease. Relationship between culture, politics and health.

## RURAL SOCIOLOGY

For course descriptions, see Department of Agricultural Economics and Rural Sociology.

261. INTRODUCTION TO RURAL SOCIOLOGY (5). Credit not allowed in this course and SY 201.
362. COMMUNITY ORGANIZATION (5).
370. METHODS OF SOCIAL RESEARCH (5). Pr., RSY 261 or SY 201.
371. APPLIED RESEARCH METHODS AND PROGRAM EVALUATION (3). Credit not allowed in this and in RSY or SY 370.
490. SENIOR SEMINAR (1). Pr., senior standing.
499. DIRECTED STUDIES IN RURAL SOCIOLOGY (1-5). Pr., COI.
541. EXTENSION PROGRAMS AND METHODS (5).
561. RURAL SOCIOLOGY (5).
562. SOCIOLOGY OF COMMUNITY DEVELOPMENT (5).
565. SOCIOLOGY OF NATURAL RESOURCES AND ENVIRONMENT (5).
641. EXTENSION PROGRAMS AND METHODS (5).
661. RURAL SOCIOLOGY (5).
662. SOCIOLOGY OF COMMUNITY (5).
663. POLITICAL ECONOMY OF DEVELOPMENT (5).
664. SOCIOLOGY OF COMMUNITY DEVELOPMENT (5).
665. SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (5).
670. RESEARCH METHODS IN SOCIOLOGY (5).

## ANTHROPOLOGY (ANT)

200. BIOSOCIAL BACKGROUND (3). Introduction to the physical and cultural evolution of the human species with an emphasis on the fossil record, contemporary human populations and archaeological theories and methods.
201. CULTURAL FRAMEWORK (3). Introduction to cultural anthropology and linguistics, emphasizing the comparative analysis of life ways among both pre-literate and literate populations and societies.
206. CULTURAL ANTHROPOLOGY (5). Pr., ANT 203. The nature of culture. Comparative approach to the study of the principal institutions of human society and basic categories of human behavior.
207. INTRODUCTORY ARCHAEOLOGY (5). The history, principles and methods for investigating and reconstructing past cultures.
303. HISTORY OF ANTHROPOLOGICAL THEORY (5). Pr., ANT 203. The development of ethnological theory.
305. CULTURE AND PERSONALITY (3). Pr., SY 201 or ANT 203. Socio-cultural factors in personality development and recent studies in national character.
306. INTRODUCTION TO PHYSICAL ANTHROPOLOGY (5). LEC. 3, LAB. 3. Pr., ANT 203. Human origins and development; contemporary primate varieties, using a genetic and anthropometric approach.
313. STATUS OF WOMEN (5). Pr., ANT 203 or SY 201. An anthropological and sociological analysis of the status of women in societies, the cultural belief systems involved and problems resulting from status change. (A Women's Studies Minor Course.)

314. ANTHROPOLOGY OF WORK (3). Pr., junior standing. Anthropological theory and data applied to problems of various work settings.
340. ARCHAEOLOGICAL FIELD SCHOOL (5-10). Pr., COI. A field methods course, in which archaeological site surveying, excavation and analysis procedures are taught with student participation in directed research projects at a selected archaeological site.
345. ARCHAEOLOGICAL FIELD PROBLEMS (1-3). Pr., ANT 200, COI. A practical investigation of a specific archaeological field problem or problems that involves student in archaeological excavation techniques, field mapping and data recording.
401. KINSHIP, MARRIAGE AND THE FAMILY (5). Pr., ANT 203 or SY 301. The comparative study of human patterns of marriage, child rearing, inheritance, descent and kinship.
403. CONTEMPORARY ANTHROPOLOGY (5). Pr., ANT 203, junior standing. Contemporary research and theory regarding primitive, traditional and urban cultures.

#### ADVANCED UNDERGRADUATE AND GRADUATE

500. LABORATORY TECHNIQUES IN ARCHAEOLOGY (3-5). Pr., ANT 207, COI. An archaeological methods course in the analysis, preservation, cataloging and restoration of archaeological materials.
505. ARCHAEOLOGICAL LABORATORY PROBLEMS (1-3). Pr., ANT 500, COI. Investigates a specific archaeological problem or problems and involves students in laboratory techniques such as data recording, photography and report preparation.
511. LANGUAGE AND CULTURE (5). The social basis of verbal communication; functions of language in society; importance of language in contemporary social problems.
512. GENERAL ETHNOLOGY (5). Surveys ethnological data from several societies in order to provide an understanding of the range and variability of cultural phenomena.
524. SPECIAL TOPICS IN ANTHROPOLOGY (1-5). Pr., ANT 203 or COI. Examines selected topics from an anthropological perspective. May be repeated for a maximum of 10 hours.
531. SOUTHEASTERN ARCHAEOLOGY (5). Pr., ANT 207. A survey of the findings of archaeologists working southeastern North America, detailing the diversity and complexity of prehistoric Indian cultures in the region.
532. INDIANS OF NORTH AMERICA (5). Aboriginal cultures of North America. Effects of culture contact. Contemporary problems of Indian communities.
534. MESOAMERICAN ARCHAEOLOGY (5). Pr., ANT 207. A survey of the prehistoric cultures of Mexico and Central America, with particular emphasis on the Olmec, Toltec, Maya and Aztec cultures.
540. HISTORICAL ARCHAEOLOGY AND ETHNOHISTORY (5). Pr., COI. A review of the methods and findings of these two subfields, with emphasis on anthropological approaches to the past culture and history of peoples who left few written records: slaves, Indians, lower classes.
550. DIRECTED READING (1-5). Pr., COI and junior standing. An independent reading program, under supervision, to provide for the pursuit of specific interests in anthropology not covered by other course offerings. Can be repeated for a maximum of 10 hours credit.
590. SENIOR THESIS IN ANTHROPOLOGY (3). Pr., senior standing and COI. Independent reading and/or research in selected fields of anthropology. Requires a thesis in anthropology.
612. SPECIAL TOPICS IN ETHNOLOGY (5). Pr., COI. An intensive study of peoples and cultures from a particular geographical area of cultural adaptation.

#### CRIMINOLOGY (SCR)

302. CRIMINOLOGY (5). Pr., SY 201, junior standing. The causes of crime and its social treatment.
308. JUVENILE DELINQUENCY (5). Pr., SY 201. Historical and contemporary considerations relative to the juvenile offender. The emphasis is upon research data from the various sciences attempting to deal with the problem.
415. JUVENILE JUSTICE (5). Pr., SY 201 or COI. Analysis of the juvenile justice system with special emphasis on some of the unique issues and problems that are involved in the adjudication and rehabilitation of juvenile offenders. Credit for PO 415 precludes credit for SCR 415.
420. PROBATION AND PAROLE (5). Pr., SY 201 or COI. An introduction to the fields of probation and parole. Following a brief discussion of the historical development, the course will attempt to acquaint students with current theories, practices, organizational goals and problems with both adult and juvenile probation and parole programs.
426. PENOLOGY (5). Pr., SY 201 or COI. The history and development of corrections with particular emphasis upon modern rehabilitative processes.
450. SOCIOLOGY OF CRIMINAL LAW (5). Pr., SY 201 or COI. Examines how and under what conditions behavior comes to be defined as criminal and how legal codes interact with other normative systems in society.
501. DRUGS AND SOCIETY (5). Pr., SCR 302 or SCR 308, junior standing. Emphasizes the social context and correlates of drug usage, relationship with crime and delinquency, the nature of societal reaction and pertinent sociological theories concerning drug related behavior.
510. WOMEN IN THE CRIMINAL JUSTICE SYSTEM (5). Pr., SY 201 or COI. Examines the impact of gender within criminal justice from a sociological perspective; females as victims, offenders and/or practitioners.
514. FIELD INSTRUCTION IN CRIMINOLOGY (1-10). Pr., COI. Supplementary instruction concurrent with experience in some field of work related to Criminology. May be repeated for a maximum of 10 hours credit.

## Textile Engineering

515. **POLICE AND SOCIETY (5).** Pr., SY 201 or COI. The social organization of police, police subcultures, socialization of police officers, decision-making and discretion and the relationship between police and other components of the criminal justice system.
520. **VICTIMOLOGY: CRIMINAL—VICTIM RELATIONSHIPS (5).** Pr., SY 201 or COI. Examines the impact of victimization upon the victim, offender and society and addresses the relationship between the victim and offender.
530. **CONTEMPORARY CORRECTIONS (5).** Pr., SCR 302 or 426 or COI and junior standing. Examination of current adult correctional programs and practices. Emphasis on community corrections.
555. **DIRECTED READINGS IN CRIMINOLOGY (VARIABLE CREDIT) Pr., COI.** An independent reading program, under supervision, to provide for the pursuit of specific interests in criminology not covered by other course offerings. May be repeated for a maximum of 10 hours credit.

## SOCIAL WORK (SW)

320. **SOCIAL WORK FIELD PRACTICUM (1-5) Pr., COI.** An introduction to the fields, methods and settings of social work practice through an internship in a selected social work setting. Stresses a basic understanding of social service organizations. Students work under the joint supervision of the placement agency and the university. A seminar is held regularly to evaluate, discuss and interpret the student's work. Social Work majors must earn four hours credit. May be taken by any major for a maximum of five hours credit.
375. **INTRODUCTION TO SOCIAL WELFARE (5).** Pr., sophomore standing. The development of U.S. social welfare programs, policies and services. Emphasizes political, economic and social factors involved. Introduction to health and welfare services of local community.
376. **COMMUNITY SOCIAL SERVICES (5).** A review of the social services available in a typical community in areas of health, income, housing, crises, child welfare, legal and mental health. Addresses procedures in linking clients with services and work with blacks, the aged, families and groups.
377. **CHILD WELFARE (5).** Reviews practice in child abuse and neglect, foster care, child care and adoptions. Addresses work with blacks, court procedures and worker stress. Opportunity for experience.
380. **HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT I (5).** Pr., SY 201. The integration of social science perspectives for the social work student. Surveys interpretations of biological, socio-psychological and cultural determinants of behavior for social work practice. Emphasis is on individual, family and small group levels.
381. **HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT II (5).** Pr., SW 380. Integrates social science perspectives through a survey of interpretations of biological, social, psychological and cultural determinants of behavior for social work practice. Emphasis is on human behavior in formal organization and communities.
385. **AGING ISSUES AND SERVICES (2-5).** Pr., SY 201, SW 375, or COI. Reviews social services and social work with elderly and issues in economics, religion, health, mental health, politics, mass media education, biology, housing, nutrition and recreation. Field work option.
420. **SOCIAL WORK FIELD PLACEMENT (1-15).** Pr., SW 508, and COI. A planned field experience in which the student is placed in a community service agency, working under the joint supervision of the agency and the University. A seminar is held regularly to evaluate, discuss and interpret the student's work.
426. **SPECIAL TOPICS IN SOCIAL WORK (1-5).** Pr., SY 201 or COI, junior standing. Examines selected topics from a social work perspective. May be repeated for a maximum of 10 hours credit.

## ADVANCED UNDERGRADUATE AND GRADUATE

506. **SOCIAL WORK METHODS I (5).** Pr., SW 375, SW 380 and admission to social work program or COI. The first in a sequence of social work practice method courses focusing on the application of knowledge value and skill in carrying out a problem-solving, systems oriented approach with clients at the individual, small group, organization and community level. Emphasis on application of research, process of social change, non-judgmental practitioner stance and regard for cultural, racial, age and lifestyle variations.
507. **SOCIAL WORK METHODS II (5).** Pr., SW 376, 506. Continuation of SW 506.
508. **SOCIAL WORK METHODS III (3).** Pr., SW 507. Continuation of SW 507.
575. **SOCIAL WELFARE POLICY (5).** Pr., SW 375 or COI. Current problems, policy issues and proposals in selected social welfare programs are critically examined and evaluated.

## Textile Engineering (TT, TC, TE and TMT)

Professors Walsh, Head, Hall, Lynch and Perkins  
Associate Professors Broughton, Reed and Walker  
Assistant Professor El-Moghazy  
Adjunct Professor Teague

General Curriculum, GC, students (those with undeclared majors) may enroll only with departmental consent.

## DEPARTMENTAL COURSES (TT)

101. **INTRODUCTION TO TEXTILES (1).** LAB. 2. Freshman orientation to textile programs and options and an introduction to textile terminology.
102. **SURVEY OF THE TEXTILE INDUSTRY (1).** LAB. 2. Pr., TT 101 or COI. Introduction to the scope of the textile industry stressing use of library and interaction with local industry and faculty of the department.



## Textile Engineering

103. TEXTILE CAREERS (1). LAB. 2. Pr., TT 102 or COI. Coreq., CSE 100 or 120. A review of career options available to graduates from textile degree programs.
211. YARN FORMING SYSTEMS (5) LEC. 4, LAB. 2. Forming of staple and filament yarns. Interactions between raw materials and manufacturing systems that create specified product characteristics.
221. FABRIC FORMING SYSTEMS (5). LEC. 4, LAB. 2. The basic forming systems for textile fabrics including knit, woven and non-woven structures.
270. STATISTICS FOR TEXTILE PROCESS CONTROL (5). Pr., sophomore standing. Sampling and analysis of textile data. Fiber selection statistics and methods of handling textile attribute data. Application of Taguchi quality engineering concepts in the textile discipline.
350. TESTING OF TEXTILE MATERIALS (4). LEC. 2, LAB. 4. Pr., TT 211 and TT 221. Basic principles of measuring the physical and chemical properties of natural and man-made textile materials; included supplementary laboratory experiments.
479. HONORS THESIS (3). Pr., senior standing. Individual student endeavor consisting of directed research and writing of honors thesis. (Honors Program students only. May be taken more than once and may be substituted for TC 490, TE 490 or TMT 490).

### TEXTILE CHEMISTRY (TC)

409. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course designed with varying emphases to give student opportunity for overview in specific areas of textile technology. (May be repeated for up to five credits).
441. APPLIED DYEING THEORY (4). Pr., TE 341. Dye fiber bonding; thermodynamics and kinetics of dyeing.
490. UNDERGRADUATE RESEARCH I (3). LEC. 1. Pr., senior standing. Initial quarter of an undergraduate research sequence.
491. UNDERGRADUATE RESEARCH II (3). Pr., TC 490 or TT 479. Conclusion of an undergraduate research sequence. (May be taken more than once with departmental consent.)

### ADVANCED UNDERGRADUATE

560. TEXTILES FINISHES (4). Pr., TE 341 or COI. Textile finishing processes, machinery and developing technology are covered. Both mechanical and chemical finishing are included. Emphasis is on the theory of application, the mechanism by which the finish works, and its effect on fabric properties.

### TEXTILE ENGINEERING (TE)

331. STRUCTURE AND PROPERTY OF FIBERS (4). Pr., CH 208. The use of a fiber depends on its properties and these properties in turn depend on the chemical structure and morphology of the fiber. These interrelationships between structure, property and use are explored.
332. FIBERS LABORATORY (2). LAB. 6. Coreq., TE 331. A fibers laboratory to accompany TE 331 will include microscopic and chemical techniques of fiber identification and chemical and physical methods useful in the preparation and analysis of fibers.
340. TEXTILE CHEMICAL PROCESSES I (4). LEC. 3, LAB. 2. Pr., TE 331, 332. Principles and processes for bleaching, dyeing and finishing of textile yarns and fibers. Emphasis is on the coloration of textiles, the chemical principles of dyeing and finishing.
341. TEXTILE CHEMICAL PROCESSES II (4). LEC. 3, LAB. 2. Pr., TE 340. Continuation of TE 340 with emphasis on mechanical aspects of dyeing and finishing, quality control and process control.
355. NUMERICAL METHODS AND COMPUTER APPLICATIONS (3). Pr., MH 265 and CSE 120. Use of digital computers to solve more computationally difficult textile engineering problems.
360. MECHANICS OF FLEXIBLE STRUCTURES (5). Pr., MH 265. Analysis of mechanical behavior and physical properties of one and two dimensional flexible structures; such as fibers, yarns and fabrics. The influence of geometrical structure and material properties on the mechanical properties of flexible structures will be undertaken.
363. TEXTILE THERMODYNAMICS (4). Pr., ME 201, CSE 120. A continuation of thermodynamics to include steam and refrigeration cycles and more difficult first and second law applications to textile processes.
409. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course designed with varying emphases to give student opportunity for overview in specific areas of textile technology. (May be repeated for up to five credits).
456. INSTRUMENTATION AND CONTROL (4). LEC. 3, LAB. 2. Pr., TT 211, 221, EE 302. Fundamentals of laboratory analytical instruments and process instruments and controls.
490. TEXTILE ENGINEERING DESIGN I (3). LEC. 1. Pr., senior standing. Initial quarter of an undergraduate research sequence.
491. TEXTILE ENGINEERING DESIGN II (3). Pr., TE 490 or 479. Conclusion of undergraduate research sequence (May be taken more than once with departmental consent).
494. SPECIAL PROBLEMS IN TEXTILE ENGINEERING (3). Pr., senior standing. Recent developments in textile materials and processes in the industry such as geotextiles, biomedical materials, distributed process control and energy management, fabric and yarn forming, dyeing and finishing operations.

### ADVANCED UNDERGRADUATE

562. ADVANCED MECHANICS OF FLEXIBLE STRUCTURES (3). Pr., TE 360 or COI. Advanced mechanical behavior of flexible structures, based on the geometrical parameters and properties of their constituent materials.

## TEXTILE MANAGEMENT AND TECHNOLOGY (TMT)

200. SURVEY OF TEXTILE TECHNOLOGY (3). A survey of the technology dealing with the manufacture of textiles, including fiber, yarn, fabric and coloration and finishing treatments. (Credit in TT 101, 102 and 103 precludes credit in TMT 200).
212. SPECIAL TOPICS IN YARN MANUFACTURING (3). LEC. 2, LAB. 2. Pr., TT 211. An extension of TT 211. Mechanics of yarns, geometry and properties of yarns as influenced by processing techniques. Both conventional and non-conventional processes are explored.
231. TEXTILE FIBERS I (5). LEC. 4, LAB. 2. Pr., CH 203. Natural and man-made fibers, their production, structure and properties. The relationship between polymeric fibrous materials, and products and utilization.
232. TEXTILES FIBERS II (3). LEC. 2, LAB. 2. Pr., TMT 231. An extension of TMT 231. Provides an in-depth analysis of physical and chemical structure and resulting properties of textile fibers. Application of fiber theory to practical manufacturing situations.
241. DYEING AND FINISHING OF TEXTILE MATERIALS (5). LEC. 4, LAB. 2. Pr., CH 203; Coreq., CH 104. Emphasis on principles and techniques to modify textile materials by coloration, additives and surface treatment. The chemistry of these phenomena is studied.
242. CHEMICAL TECHNOLOGY OF BLEACHING, DYEING AND FINISHING (3). LEC. 2, LAB. 2. Pr., TMT 241. Bleaching, dyeing and finishing of fabrics made from natural and man-made fibers; dyes and pigments for textiles, their chemical structure and utility.
320. DEVELOPMENT AND ANALYSIS OF FABRICS (5). LEC. 3, LAB. 4. Pr., TT 221. Design limitations and analysis techniques for primary fabric structures are presented. Students required to reconstruct specifications from samples.
322. NON-CONVENTIONAL FABRIC STRUCTURES (2). Pr., TT 221, TMT 231. Methods of fabric forming other than conventional weaving or knitting are surveyed. More emphasis is placed on specific methods of greater economic significance.
325. DESIGN OF TEXTILE FABRICS (1-5). Pr., departmental approval, junior standing. Individual student projects involving technical fabric drafts for selected fabric types, including woven, knitted and tufted structures. (May be repeated for up to 10 total credits).
352. TEXTILE QUALITY CONTROL (3). Pr., TT 270, 350. The practical application of quality control in the textile industry with emphasis on statistical control techniques. Areas covered included measures of variation, statistical quality control charts, sample size, confidence interval, significance testing, correlation and analysis of variance.
409. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course designed with varying emphases to give student opportunity for overview in specific areas of textile technology. (May be repeated for up to five credits).
480. PLANT OPERATION AND COST CONTROL (4). Pr., senior standing. Establishing the criteria and implementation of modification of operations including a plant changeover. The technical requirements, constraints, use of assets and procedure to determine and control manufacturing costs are included.
490. UNDERGRADUATE RESEARCH I (3). LEC. 1. Pr., senior standing. Initial quarter of an undergraduate research sequence.
491. UNDERGRADUATE RESEARCH II (3). Pr., TMT 490 or TT 479. Conclusion of an undergraduate research sequence. May be taken more than once with departmental consent.

## Theatre (TH)

Professors Harrison, *Acting Head*, and York

Associate Professors Miller and Lockrow

Assistant Professors LaRocque, Robinson, Selby and Thudium

100. THEATRE CONVOCATION (0). Required of all declared theatre majors during every quarter of residency. Workshops, critiques, performances, lectures and discussions by faculty, students and visiting artists and scholars.
200. INTRODUCTION TO ACTING AND DIRECTING (3). Exploration of the basic principles and processes of acting and directing through lecture, discussion and concentrated laboratory work.
201. INTRODUCTION TO THE THEATRE (3). Appreciation of theatre arts including stage, television and film. Development of sensitivity and critical sophistication as articulate, discriminating theatregoers. Play and film viewing, play reading, critiques and term projects.
211. VOICE FOR THE ACTOR I (2). Pr., TH 200 or COI. Introduction to the mechanics and methods of voice production for the stage.
212. ACTING I: FUNDAMENTALS (4). Pr., TH 211 or COI. Exploration of basic performance techniques, utilizing improvisation, theatre games and other exercises to develop creative awareness.
214. MOVEMENT FOR ACTOR I (3). Pr., TH 200 or COI. Theory and practice in training the body to serve as a means of communication for the actor.
231. THEATRE TECHNOLOGY I (3). Principles and practice in the planning, drafting of work drawings, construction, painting, rigging and shifting of stage scenery. Practical experience.
232. THEATRE TECHNOLOGY II (4). Pr., TH 231. Principles and practice of stage lighting technology, stage sound technology and the construction of hand, set and dress properties for the stage.
233. DRAFTING FOR THE THEATRE (4). Pr., 231 or COI. A comprehensive study of the techniques and methods used in the graphic representation of stage scenery and properties.

240. THEATRICAL DESIGN (3). The elements of design used in the creation of theatrical space. Exploration of the fundamental visual design elements and materials with experimentation in their application to theatrical design. Practical utilization of design theory in various visual and theatrical design projects.
261. COSTUME CONSTRUCTION (3). The basic steps used in costume construction for the theatre from patterns through final ornamentation. Practical experience.
265. STAGE MAKEUP (3). Basic principles and practice of stage makeup and makeup design including facial painting and techniques of prosthesis.
271. PLAY ANALYSIS (3). Pr., TH 201 or COI. How to read a play with an examination of traditional and non-traditional scripts of various periods and genres.
281. THEATRE PRODUCTION I (4-8). Pr., departmental approval. Summers only. Intensive study of theatre arts through participation in the AU Summer Repertory Theatre.
282. SUMMER REPERTORY THEATRE COMPANY (6-12). Pr., departmental approval. Summers only. A concentrated workshop experience in all aspects of theatre production through participation in rehearsal and performance.
284. DANCE TECHNIQUES (2). Pr., TH 200 or COI. Introduction to dance fundamentals, including ballet and jazz. May be repeated for up to six credits.
285. BALLET (2). Beginning theory and practice in fundamentals and terminology. May be repeated once for credit.
286. MODERN DANCE (2). Beginning theory and practice in fundamentals and terminology. May be repeated once for credit.
287. JAZZ DANCE (2). Beginning theory and practice in fundamentals and terminology.
288. TAP (2). Beginning theory and practice in fundamentals and terminology. May be repeated once for credit.
300. THEATRE LABORATORY (1-4). Required of all theatre majors during every quarter of residency; a minimum of six hours required for graduation. Practice in various areas of arts and crafts of theatre, including construction and painting of scenery and properties, stage operation, lighting, sound, costuming, makeup, publicity and business management.
302. THEATRE APPRECIATION (1). Attendance at selected local theatre and film productions with discussion sessions prior to and following performances. Brief critical papers required.
305. CREATIVE DRAMATICS (3). Leadership principles in creative dramatics: story materials and their adaptation to children's needs; techniques for planning, guiding and evaluating improvised drama; emphasis on creative dramatics as a teaching/learning tool in the classroom.
306. CHILDREN'S THEATRE (3). Theatre for children, involving an examination of play scripts, acting, and production techniques.
310. ACTING: PRACTICUM (1-4). Open to students cast in Auburn University Theatre productions. May be repeated for credit.
311. VOICE FOR THE ACTOR II (2). Pr., TH 211. Theory and techniques of stage voice.
312. ACTING II: CHARACTERIZATION (5). Pr., TH 212. Theory and techniques of character analysis development and the process of creating a role through the study of characters in significant play texts.
313. ACTING: PERFORMANCE TECHNIQUES FOR THE CAMERA (3). LEC. 2, LAB. 2. Pr., COI. Theory, rehearsal and performance of specialized acting techniques for film and television.
314. MOVEMENT FOR ACTOR II (3). LEC. 1, LAB. 3. Pr., TH 214 or COI. Theory and practice in stage movement with practical experience in mime, stage combat, period dance, movement analysis.
320. STAGE MANAGEMENT (3). Pr., TH 231 or COI. Basic principles of stage management, involving the duties of the stage manager in relation to production and personnel.
321. DIRECTING: FUNDAMENTALS (3). Pr., TH 211, 271 or COI. Theories and techniques of stage direction; analysis of plays; preparation of production plans; practice in stage direction, including open casting and production of at least two scenes before an invited audience.
322. DIRECTING: ADVANCED (4). Pr., TH 321 or COI. Advanced theories and techniques of stage direction; problems of dealing with actors, characterization and style; production of selected scenes and/or one-act play before an invited audience.
331. ADVANCED THEATRE TECHNOLOGY (4). Pr., TH 231 or COI. Practical application of new materials and techniques in the theatre, including plastics, metals and other non-traditional products.
333. SCENE PAINTING (4). Pr., TH 240 or COI. Practical techniques and skills for executing the scenic/visual elements of theatrical designs, including traditional painting styles and non-traditional materials and methods.
341. SCENE DESIGN I (4). Pr., TH 240 or COI. Theory and practice of designing and executing scenery for the stage. Emphasis on traditional styles and methods. Fundamentals of presenting the design idea in perspective rendering and model form.
342. PROPERTY DESIGN (3). LEC. 2, LAB. 2. Pr., TH 240 or COI. History, theory and practice of designing and executing properties for the stage, including furniture.
345. RENDERING FOR THE THEATRICAL DESIGNER (4). Pr., TH 240 or COI. Exploration of traditional drawing and rendering techniques to facilitate designer communication in scenic, lighting and costume design. Exercises in handling a variety of artistic media.
351. LIGHTING DESIGN (4). Pr., TH 232, 240 or COI. Principles and practice of stage lighting both as a design and technical medium. Practical production experience in lighting traditional and experimental theatre spaces.
352. SOUND DESIGN (4). LEC. 3, LAB. 3. Pr., TH 231 or COI. Principles and practice of stage sound, both as a design and as a technical medium.

361. COSTUME HISTORY I (4). The history of costume from ancient Egypt through 1750.
362. COSTUME HISTORY II (4). The history of costume from 1750 to the present.
363. ADVANCED COSTUME CONSTRUCTION I (4). Pr., TH 261 or COI. Pattern drafting and draping and their relationship to a costumer's craft.
365. COSTUME DESIGN I (4). Pr., TH 240, 361, 362 or COI. Principles and practice of costume design with emphasis on designing and rendering costumes from various historical periods.
371. HISTORY OF THEATRE I (3). Social, religious, political and artistic forces that have contributed to the development of theatre and drama in western civilization from its origin through the Medieval theatre.
372. HISTORY OF THEATRE II (3). Social, religious, political and artistic forces that have contributed to the development of theatre and drama in western civilization beginning with the Renaissance and continuing through French Neo-Classical.
373. HISTORY OF THEATRE III (3). Social, religious, political and artistic forces that have contributed to the development of theatre and drama in western civilization beginning with English Restoration and continuing to 1875.
374. HISTORY OF THEATRE IV (3). Social, religious, political and artistic forces that have contributed to the development of modern European theatre and drama from 1875 to 1980.
400. PROFESSIONAL INTERNSHIP (1-12). Pr., completion of core program in BFA theatre major and departmental approval. Internship with professional or community theatres in the student's general field of specialization (one hour credit for each 30 hours work).
405. THEATRE OPERATIONS/MANAGEMENT (4). Theory and practice of theatre management and arts administration.
409. THEATRE OPERATIONS/MANAGEMENT: SPECIAL PROJECTS (2-4). Pr., COI. Selected projects in theatre management and arts administration.
411. VOICE FOR THE ACTOR III (3). Pr., TH 312. Advanced theory and techniques of speaking voice production for the stage.
412. ACTING III: SCENE STUDY (5). Pr., TH 312. Advanced characterization study and application, including rehearsal and performance of roles from selected scenes before an invited audience.
413. ACTING: AUDITIONS (1). Pr., TH 200 and COI. The theories, techniques and realities of auditions: preparation of 4-5 pieces with presentation of at least two selected pieces before an invited audience.
415. ACTING: SENIOR STUDIO (1-3). Pr., TH 312. Advanced studies in acting. Open only to BFA Performance majors with senior standing. May be repeated for up to nine credits.
419. ACTING: SPECIAL PROJECTS (2-4). Pr., COI. May be repeated to a maximum of eight hours. Selected advanced projects or recitals for public theatre production.
421. DIRECTING: PERIODS (4). Pr., TH 322 or COI. Advanced theories and techniques of stage direction relating to problems of verse and period dramatic literature; production of selected scenes before an invited audience.
429. DIRECTING: SPECIAL PROJECTS (2-4). Pr., COI. May be repeated to a maximum of eight hours. Direction of a long one-act or full length play for public performance.
439. THEATRE TECHNOLOGY: SPECIAL PROJECTS (2-4). Pr., COI. May be repeated to a maximum of eight hours. Selected projects in theatre technology and/or technical direction executed before a public audience.
441. HISTORY OF DESIGN IN THE THEATRE (4). A survey of design elements, including architecture, as practiced in the significant movements in theatre history from the time of the ancient Greeks to the present.
442. SCENE DESIGN II (4). Lec. 3, Lab. 3. Pr., TH 341 or COI. Advanced theory and practice in the use of scenery and light for the theatrical event. Emphasis on experimental and non-traditional design for a variety of theatre spaces.
449. SCENE DESIGN: SPECIAL PROJECTS (2-4). Pr., COI. May be repeated to a maximum of eight hours. Selected projects in scenic design executed before a public audience.
459. LIGHTING DESIGN: SPECIAL PROJECTS (2-4). Pr., COI. May be repeated to a maximum of eight hours. Selected projects in lighting design executed before a public audience.
461. ADVANCED COSTUME CONSTRUCTION II (4). Pr., TH 261 or COI. The principles and execution of tailoring period and modern clothes for the stage and the utilization of a costumer's related crafts chosen from macramé, knitting, fabric painting, basic millinery, jewelry construction and cobblering.
465. COSTUME DESIGN II (4). Lec. 3, Lab. 3. Pr., TH 365 or COI. Advanced principles and practice of costume design with emphasis on designing and rendering costumes utilizing new and/or non-traditional approaches.
469. COSTUME DESIGN: SPECIAL PROJECTS (2-4). Pr., COI. May be repeated to a maximum of eight hours. Selected projects in costume and/or makeup design executed before a public audience.
471. AMERICAN THEATRE HISTORY I (3). A survey of American theatre and drama from the beginnings to World War I.
472. AMERICAN THEATRE HISTORY II (3). A survey of American theatre and drama from World War I to the present.
475. DRAMATIC THEORY AND CRITICISM (4). A survey and analysis of selected writings on the structure and aesthetic values of both the drama and the theatre.
481. THEATRE PRODUCTION II (4-8). Pr., TH 281 and departmental consent. Summers only. Advanced problem-solving in theatre production with emphasis upon individual assignment to positions in the repertory theatre.
482. SUMMER REPERTORY THEATRE COMPANY II (6-12). Pr., TH 282 and departmental consent. Summers only. An intensive experience in all aspects of theatre production. The advanced student may focus on the development of professional artistic skills.

489. DANCE: SPECIAL PROJECTS (2-4). Pr., COI. May be taken for a maximum of eight hours. Selected projects in dance.
491. INDEPENDENT STUDY (1-4). Pr., COI and the department head's approval. May be repeated to a maximum of 16 hours. Directed reading, creative and tutorial projects of interest to the advanced student.
498. THEATRE SEMINAR: (various titles to be assigned) (1-8). Pr., COI. May be repeated to a maximum of 16 hours. Intensive study of special theatre topics falling outside the regular theatre offerings. Individual topics announced prior to offering of the course.
499. SENIOR PROJECT (2-4). Pr., COI. Research and production of senior project. Required of all B.F.A. candidates.

## **Veterinary Medicine (VM)**

### **ANATOMY AND HISTOLOGY**

Professors Krista, *Head*, and Gray

Associate Professors Buxton, Cartee, Garrett, Kincaid, Marshall, Morrison and Rumph  
Resident Caudill

### **LARGE ANIMAL SURGERY AND MEDICINE**

Professors Kirk, *Head*, Purohit and Vaughan

Associate Professors Carson, Humburg, Powe, Riddell, Schumacher and Wolfe

Assistant Professors Baird, Duran, Erskine, Harrison, Lin, Pugh,

Tyler, Wallace and Wenzel

Adjunct Assistant Professor Floyd

Residents Brendemuehl, DiFranco and Dowling

Interns Comer and Montes

### **PATHOBIOLOGY**

Professors Wolfe, *Head*, Bailey, Colby, Groth, Morgan,

Powers, Rossi, Smith and Spano

Adjunct Professors Alley, Klesius, Lauerman, Lindsey and Robinson

Associate Professors Bird, Blagburn, Boosinger, Ewald, Hendrix, Hoerr, Kwapien, Nusbaum,

Panangala, D. Stringfellow, Swango, Weiss, Wilt and Wright

Adjunct Associate Professors Frandsen and Giambrone

Assistant Professors Boudreaux, Brunner, Cox, Price, Sartin and Van Santen

Adjunct Assistant Professor Young

Adjunct Instructors D'Andrea and J. Stringfellow

Research Associates Gresham, Lindsay, Pai, Rowe and Toivio-Kinnucan

Residents McRae and Oliver

### **PHYSIOLOGY AND PHARMACOLOGY**

Professors Clark, *Head*, Beckett, Branch, Robertson and Wilson

Adjunct Professors Neil, Blalock and Cummins

Associate Professors R. Kemppainen, Paxton, Sartin and Vodyanov

Assistant Professors B. Kemppainen, Myers and Vaughn

Residents Ogden and Zerbe

Research Fellow Young

Research Associates Sievert and Weng

### **RADIOLOGY**

Professor Bartels, *Head*

Adjunct Professor Marich

Associate Professor Cartee

Assistant Professors Brawner and Hathcock

Postdoctoral Fellow Hudson

Residents Baird, Banfield and Jones



**SMALL ANIMAL SURGERY AND MEDICINE**

Professors Knecht, Head, Braund, Dillon, Hanks,  
Henderson, Horne, Milton, Swaim and Whiteley  
Adjunct Professors Hughston and Silberman

Associate Professors Angarano, MacDonald, McLaughlin, Simpson, Sorjonen and Steiss

Assistant Professors Brewer, Golden, Mansfield McIntire and Wiggins

Residents Crager, Daley, Gilger, Pemell, Shealy and Thomas

Interns Bostwick, Delger, Gordon and Singer

**VETERINARY MEDICINE (VM)**

Following this section of Veterinary Medicine course descriptions, the remaining VM courses are listed under their alphabetically arranged departments.

300. ORIENTATION (2). Fall. Dynamics of professional responsibilities, duties and privileges of the veterinarian.
313. PHYSIOLOGY I (5). LEC. 5. Fall. Cell physiology and neuroscience.
314. PHYSIOLOGY II (5). LEC. 5. Winter. Cardiovascular and respiratory physiology.
315. PHYSIOLOGY III (5). LEC. 4. LAB. 2. Spring. Kidney, liver and digestive systems.
316. PHYSIOLOGY IV (5). LEC. 5. Winter. Endocrinology, reproduction and integrative physiology.
319. PHARMACOLOGY I (5). LEC. 4. LAB. 2. Fall. Introductory pharmacology and CNS drugs.
- 320-321-322. ANATOMY I, II, III (5-5-5). LAB. 10. Fall, Winter, Spring. Gross anatomy of domestic animals. The gross structures of the dog, cat, ox, horse, hog and fowl.
326. MICROSCOPIC ANATOMY I (3). LEC. 1. LAB. 4. Fall. Microscopic anatomy of the form, structure and characteristics of the basic tissues of animals.
327. MICROSCOPIC ANATOMY II (4). LEC. 1. LAB. 6. Pr., VM 326. Winter. Microscopic anatomy of the gastrointestinal, blood, cardiovascular, hemopoietic, integumentary, respiratory and lymphoid systems.
328. MICROSCOPIC ANATOMY III (4). LEC. 2. LAB. 4. Pr., VM 327. Spring. Microscopic anatomy of the urogenital, endocrine, auditory and visual systems as well as placentation.
331. VETERINARY MICROBIOLOGY I (4). LEC. 3. LAB. 2. Fall. Veterinary immunology and principles of epidemiology.
401. PHARMACOLOGY II (3). LEC. 2. LAB. 2. Winter. Cardiovascular, renal and gastrointestinal drugs.
402. PHARMACOLOGY III (2). LEC. 2. Spring. Pharmacology of antibacterial drugs.
403. VETERINARY TOXICOLOGY I (3). LEC. 3. Fall. Toxicology-chemicals, venoms.
405. PATHOLOGY I (5). LEC. 4. LAB. 2. Pr., VM 322, 328. Fall. General concepts of pathology, introduction to disease processes affecting animals, laboratory work on gross and microscopic pathological changes.
406. PATHOLOGY II (5). LEC. 4. LAB. 2. Pr., VM 405. Winter. Continuation of VM 405.
407. PATHOLOGY III (4). LEC. 3. LAB. 2. Pr., VM 406. Spring. Continuation of VM 406.
408. LABORATORY ANIMAL MEDICINE (3). LEC. 2. LAB. 2. Pr., VM 405 and 406. Fall. Management, utilization and disease of the common laboratory mammals including rats, mice, guinea pigs, hamsters, rabbits and nonhuman primates.
409. VETERINARY PARASITOLOGY I (4). LEC. 3. LAB. 2. Fall. Introduction to parasitology including internal and external parasites of domestic animals.
410. VETERINARY PARASITOLOGY II (4). LEC. 3. LAB. 2. Pr., VM 409. Winter. Continuation of VM 409.
411. VETERINARY MICROBIOLOGY II (5). LEC. 4. LAB. 2. Pr., VM 331. Winter. Bacteriology and mycology.
412. VETERINARY MICROBIOLOGY III (5). LEC. 4. LAB. 2. Pr., VM 331 and 411. Spring. Veterinary virology. Chlamydia is considered briefly.
413. MICROBIOLOGY IV (5). LEC. 4. LAB. 2. Applied immunology, preventive medicine and zoonoses.
414. L.A. MEDICINE I (5). LEC. 5. Fall. Detailed etiology, symptoms, pathogenesis, diagnosis, treatment and prevention of the medical diseases affecting the various systems and organs of the equine, bovine, ovine and porcine species.
420. L.A. MEDICINE II (5). LEC. 5. Fall. Continuation of VM 414 and includes nutritional deficiency diseases.
421. INTRODUCTION TO VETERINARY SURGERY (3). LEC. 3. Fall. Background of surgery; major surgical injuries—wounds, fluid loss and infection; preoperative and postoperative care; surgical techniques; anesthesia.
422. L.A. SURGERY (3). LEC. 3. Winter. Special surgical diseases of the domestic farm animals including surgery of the alimentary canal, the chest and abdomen, the respiratory and cardiovascular systems, the eye and ear, the genito-urinary tract and the feet and limbs.
423. CLINICAL PATHOLOGY (5). LEC. 5. Pr., VM 407. Spring. Methods for the collection, preservation and examination of various body fluids including blood and urine. Interpretation of results is directed toward clinical diagnosis and prognosis.
424. S.A. MEDICINE & SURGERY II (3). Fall. The diagnostics, medical and surgical treatment of small animals.
425. S.A. MEDICINE & SURGERY III (5). Pr., VM 424. Winter. Continuation of VM 424.
426. CLINICAL PATHOLOGY LABORATORY (1). LAB. 2. Pr., VM 432. Winter. Practical diagnostic laboratory experience in clinical pathology, microbiology and immunology.
427. S.A. MEDICINE & SURGERY I (4). LEC. 4. Spring. The systemic diseases and clinical immunologic procedures in small domestic animals.

428. L.A. PHYSICAL DIAGNOSIS (2). LEC. 1, LAB. 2. Spring. Demonstration and application of principles and techniques of physical diagnosis of large animals.
429. S.A. PHYSICAL DIAGNOSIS (1). LAB. 2. Fall. Demonstration and practice of handling, restraint, physical diagnosis and administration of therapeutic agents related to small animals.
430. VETERINARY JURISPRUDENCE AND ETHICS (2). Winter. Laws relating to the veterinary profession. Professional ethics for the veterinarian.
431. VETERINARY RADIOLOGY (4). LEC. 4. Fall. Basic diagnostic radiology including interpretations, techniques, ultrasound therapy and equipment.
432. MICROBIOLOGY V (3). LEC. 3. Pr., VM 411. Winter. Principles of public health and methodology of food hygiene.
433. AVIAN DISEASES (4). LEC. 4. Winter. Diagnosis, prevention and treatment of poultry diseases and the most common diseases of caged, zoo and wild birds.
435. THERIOGENOLOGY (5). LEC. 5. Spring. Clinical application of the physiology of reproduction, causes and correction of dystocia, genital examinations and infertility of the male and female.
436. SPECIAL ANATOMY (1-5). (HOURS AND CREDIT TO BE ARRANGED.) Pr., VM 320. Elective course in which any phase of anatomy of domestic animals to the anticipated field on specialization may be studied.
437. VETERINARY TOXICOLOGY (3). Fall. Identification and study of selected poisonous plants of the U.S. To include characteristic signs, lesions, methods of diagnosis and treatment.
- 438-439. L.A. MEDICINE III, IV (2-5). Summer, Fall. Principal infectious diseases of large domestic animals. Epizootiology, etiology, clinical signs, diagnosis and diseases control including immunization and sanitation.
- 440-441-442-443. S.A. CLINICS I, II, III, IV (7-7-7-5). Spring, Summer, Fall, Winter. Conferences, laboratory exercises and practice in diagnosis, control and therapy of diseases of small animals.
- 444-445-446-447. L.A. CLINICS AND LARGE ANIMAL SURGERY AND THERIOGENOLOGICAL EXERCISES I, II, III, IV (7-7-7-5). LAB. (12-18-17-18). Spring, Summer, Fall, Winter. Conferences, laboratory exercises and practice in diagnosis, control and therapy of diseases and surgical procedures for large domestic animals.
448. S.A. SURGERY PRACTICUM I (2). LAB. 4. Fall. Introductory and detailed consideration and performance of small animal surgery.
449. S.A. SURGERY PRACTICUM II (2). LAB. 4. Pr., VM 428, 448. Winter. Detailed consideration and performance of small animal surgery continued.
453. PRACTICE MANAGEMENT (2). LEC. 2. Winter. Fundamental principles of effective client, personnel, practice and business management for the veterinarian.
454. PRECEPTORSHIP (0). NON-CREDIT REQUIRED COURSE. Spring. Completion of satisfactory preceptorship during the spring quarter is required for graduation.
455. ETHOLOGY (1). LEC. 1. Winter. Animal behavior.
456. APPLIED ANATOMY I (1). LAB. 2. Pr., VM 322. Provides an in depth anatomical basis of practical application of local and regional anesthesia in the horse. Both diagnostic and therapeutic anesthesia will be included.
457. APPLIED SURGICAL ANATOMY I (1). LAB. 2. Pr., VM 320. Provides a detailed anatomical study of typical small animal orthopedic surgical approaches.
458. APPLIED SURGICAL ANATOMY II (1). LAB. 2. Pr., VM 320. Provides a detailed anatomical basis for surgical treatment of soft tissue in small animals. Thoracic, abdominal, pelvic and head topography.
459. EQUINE FOOT ANATOMY (2). LAB. 4. Pr., VM 322. Provides a detailed microscopic and gross study of the equine foot. Students will be provided the opportunity to study the gross microscopic and radiographic structure. Related to the living, normal and diseased animal.
460. EQUINE LIMB ANATOMY (2). LAB. 4. Pr., VM 322. Provides a detailed study of the equine fore and hind limb, emphasizing joints, synovial sacs, ligaments, tendons, bones, nerve and blood supply. Relates structure to functional aspects, including both normal and abnormal.
461. ULTRASONOGRAPHY (1). LAB. 2. Pr., VM 320. Provides the principles and practice of veterinary diagnostic ultrasonography in evaluating normal and abnormal anatomy of domestic animals. All modes of ultrasonography will be utilized.
462. INTRODUCTORY NEUROANATOMY (2). LAB. 2. Pr., VM 320. Provides a basic overview of the functional morphology of the central nervous system. Initial emphasis centers on the input-output segments of brain stem and spinal cord. Subsequently, long-tract relations of sensory and motor systems will be integrated with these input-output segments.
463. ADVANCED VETERINARY APPLICATIONS (4). Pr., VM 443, 447. Winter. Optional basic and clinical rotations.

## ANATOMY AND HISTOLOGY (VAH)

### ADVANCED UNDERGRADUATE AND GRADUATE

- 520-521-522. ANATOMY I, II, III (5-5-5). LEC. 2, LAB. 10. Pr., COI. Fall, Winter, Spring. Gross anatomy of domestic animals. A comparative study of the gross structures of the dog, cat, horse, hog, fowl, laboratory animals and zoo animals.
526. MICROSCOPIC ANATOMY I (5). LEC. 2, LAB. 6. Pr., COI. Fall. Microscopic anatomy of the form, structure and characteristics of the basic tissues of animals.
527. MICROSCOPIC ANATOMY II (5). LEC. 2, LAB. 6. Pr., COI. Winter. Microscopic anatomy of the tissue composition of organs and organ systems.

528. MICROSCOPIC ANATOMY III (4). LEC. 2, LAB. 4. Pr., COI. Spring. Microscopic anatomy of the reproductive organs. Formation and early development of the embryo of domestic animals. Fetal membranes and placenta are emphasized.

### PHYSIOLOGY AND PHARMACOLOGY (VPH)

501. PHARMACOLOGY II (3). LEC. 2, LAB. 2. Winter. Cardiovascular, renal and digestive drugs.  
 502. PHARMACOLOGY III (2). LEC. 2, Spring. Pharmacology of antibacterial drugs.  
 513. PHYSIOLOGY I (5). LEC. 5. Fall. Cell physiology and neuroscience.  
 514. PHYSIOLOGY II (5). LEC. 5. Winter. Respiratory and cardiovascular physiology.  
 515. PHYSIOLOGY III (5). LEC. 4, LAB. 2. Spring. Physiology of kidney, liver and digestive systems.  
 516. PHYSIOLOGY IV (5). LEC. 5. Winter. Endocrinology, reproduction and integrative physiology.  
 519. PHARMACOLOGY I (5). LEC. 4, LAB. 2. Fall. Drugs acting on the central nervous system.  
 540. VETERINARY CLINICAL ENDOCRINOLOGY (2). LEC. 2. Pr., VM 416 or equivalent and COI. Spring, even years. Current methods used in the diagnosis and treatment of endocrine disease of importance in veterinary species. Emphasis will be on current recommendations for diagnosis and therapy as well as the pathophysiology of each disorder.

### Vocational and Adult Education (VED)

Professors Drake, Head, Baker and Wilmoth

Associate Professors Hayes, Selman, Walters and Wilson

Assistant Professors Bond, Halverson, Hartzog, Kraska, O'Brien, Patterson, Robinson, Street, White and Williams

\*The shorthand and typewriting sequence should be begun at the highest possible level because credit may be gained through advanced placement. With previous training in either, the student may enter the second or third quarter course. If a grade of C or higher is earned, credit is given for the lower courses. If a C is not earned, advanced placement credit will not be granted. Consult with VBU staff for placement.

Program Designators — When appropriate, certain sections of the following common offerings are identified by programs within the departments by the use of letter designations as noted: (A) Agriculture, (B) Industrial Arts, (C) Industrial, (D) Marketing, (F) Adult, (G) Technical, (H) Business, (I) Home Economics and (T) Health Occupations.

100. KEYBOARDING FOR INFORMATION PROCESSING (2). LAB. 4. S/U. Basic instruction on standard keyboards for data entry into computers.  
 102. ORIENTATION FOR TRANSFER STUDENTS (1). Helps transfers from other curricula and students pursuing the dual objectives program to understand teacher education and teaching as a profession.  
 104. ORIENTATION TO LABORATORY EXPERIENCES IN AREA OF SPECIALIZATION (1).  
 200. TYPEWRITING I\* (3). LAB. 5. Mastery of keyboard; techniques of machine operation; basic typewritten applications. For students with no previous training in typewriting. (Students with previous typewriting instruction not eligible for credit. Consult with VBU staff for placement.)  
 201. TYPEWRITING II\* (3). LAB. 5. Pr., VED 200 or one year of high school typewriting. Emphasis on business letters, tabulation, reports.  
 210. SHORTHAND I\* (5). Pr., VED 200 or equivalent. Basic course in Gregg shorthand. Emphasis on recognition of principles; rapid reading of notes; dictation of new material.  
 211. SHORTHAND II\* (5). Pr., VED 210. Reinforcement of principles; speed building dictation; development of transcription skills.  
 216. PLASTICS TECHNOLOGY (2). LEC. 1, LAB. 2. Laboratory oriented course in material and processes of plastic products.  
 248. INSTRUCTIONAL DRAWING (3). LAB. 6. Preparing for the shop laboratory, including making freehand and pictorial sketches and drawings, reading working drawings, blue prints, manufacturers guides and lettering, use of instruments, dimensioning, making models, floor plans, bills for materials, writing specifications and developing working plans.  
 301. PRACTICUM IN WOODWORKING (3). LEC. 1, LAB. 4. Introduction to machines, tools used in working with wood and studies in design, construction, and finishing objects of wood.  
 302. ADVANCED KEYBOARDING\* (5). Pr., VED 201. Development of production competencies in office situations. Use of various office equipment.  
 305. RECORDS MANAGEMENT (3). Basic procedures of filing, records storage and control. Practice in record keeping.  
 312. SHORTHAND/TRANSCRIPTION\* (5). Pr., VED 211. Emphasis on theory development, communication skills, transcription techniques and proofreading. Transcription of office-style dictation and production of business correspondence in mailable form. Individualized development of dictation speed, transcription speed and correspondence production rates.  
 346. VOCATIONAL AND ADULT EDUCATION. (3). LEC. 2, LAB. 2. Principles of vocational education and their application in developing and operating preparatory and in-service programs.

352. MEDICAL TERMINOLOGY FOR HEALTH RELATED OCCUPATIONS (5). Equip the student with the essential medical terminology for effective communications among the various members of the health team.
354. CAREERS IN HEALTH RELATED OCCUPATIONS (5). Identification of role and function in health related occupations including the range of occupations that require minimum training as well as those that require university-level education.
356. HEALTH DELIVERY SYSTEMS (5). Contemporary and emerging patterns in delivering health services.
400. INTRODUCTION TO POWER MECHANICS (3). LEC. 1, LAB. 4. Design and operational theories related to power machines. Internal combustion engines; power trains; hydraulic and cooling systems.
401. PRACTICUM IN SMALL GASOLINE ENGINES (3). LEC. 1, LAB. 4. Application of skills and abilities needed in teaching the maintenance and repair of small air cooled engines. Theories of compression, carburetion and ignition; laboratory exercises in repair and maintenance.
402. AUTOMOTIVE CONSTRUCTION AND REPAIR (3). LEC. 1, LAB. 4. Theories of design, principles of operation and maintenance and repair of ignition system, fuel systems, power systems and chassis components.
404. PRACTICUM IN GENERAL METALS (3). LEC. 1, LAB. 4. Application of skills and abilities needed in the teaching of metal processes applicable to vocational education program in the secondary school. Metal properties; power tools; heat treating; ornamental iron work, cold metal; sheet metal; machining metals; and arc and gas welding.
405. THE SCHOOL SHOP (3). Organization and management of the school shop; methods and materials integrated with the study of jobs and problems basic to the teaching of skills in vocational education.
408. PRACTICUM IN BUILDING CONSTRUCTION AND MAINTENANCE (3). LEC. 1, LAB. 4. Application of skills and abilities needed in teaching the erections of buildings and other related structures.
407. PRACTICUM IN ELECTRICITY (3). LEC. 1, LAB. 4. Application of skills and abilities needed in the teaching of fundamental principles of electricity. Planning and developing projects involving an understanding of electrical principles as applied to materials selection, circuits, motors and devices; and maintenance and servicing of electrical equipment and appliances.
408. PRACTICUM IN GENERAL SHOP (3). LEC. 1, LAB. 6. Application of skills and abilities needed in teaching general shop skills to students and clients in school laboratories and rehabilitation centers.
409. TEACHING ELECTRONICS IN AREA OF SPECIALIZATION (3). LEC. 1, LAB. 4. Pr., consent of department head. Theories and practices used in school electronic laboratories; projects designed and constructed.
410. PROGRAMS IN HOME ECONOMICS FOR THE MIDDLE SCHOOL (4). LEC. 3, LAB. 2. Pr., admission to teacher education and FED 350 or equivalent. Principles of and experiences in designing middle school home economics programs; evaluation of instruction and programs.
411. TEACHING HOME ECONOMICS EDUCATION (5). LEC. 4., LAB. 2. Pr., admission to Teacher Education and FED 320 or equivalent. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for home economics.
412. PROGRAMS IN HOME ECONOMICS EDUCATION (4). LEC. 3, LAB. 2. Pr., admission to Teacher Education and FED 320 or equivalent. Principles of and experience in designing programs for home economics; evaluation of instruction and programs.
414. PROGRAM IN AREA OF SPECIALIZATION (3). LEC. 2, LAB. 2. Pr., admission to Teacher Education. Program planning principles involved in designing program activities for specific areas of specialization.
415. TEACHING IN AREA OF SPECIALIZATION (3-5). LEC. 2-5, LAB. 2-4. Pr., admission to Teacher Education. Understanding of curriculum content: methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for specific area of specialization.
420. INTRODUCTION TO INFORMATION PROCESSING (5). Pr., VED 302. Introduction to office technology and communication skills with emphasis on word processing concepts and systems.
421. OFFICE INTERNSHIP (10). LAB. 20. Pr., VED 440, and senior standing. Supervised work experience.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. Evaluation and analysis of the intern experience.
430. INFORMATION PROCESSING SYSTEMS (5). Pr., VED 420. Information processing applications to include electronic spreadsheets, database management, word processing and graphics.
440. ELECTRONIC OFFICE PROCEDURES (5). Pr., VED 430. Overview of the electronic office, with processing procedures, administrative support and management functions, career development and simulations.
442. PRACTICUM IN METALWORKING PROCESSES (3). LEC. 1, LAB. 4. The properties of metals and application of metalworking processes including machine tool, foundry, sheet-metal, and standard fabrication techniques.
444. PRACTICUM IN ENVIRONMENTAL SYSTEMS (3). LEC. 1, LAB. 4. Applications of theory with emphasis on design, installation and maintenance of environmental systems in residential and light commercial structures.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations.
457. PRACTICUM IN GRAPHIC ARTS INSTRUCTION (3). AB. 6. Pr., junior standing. To prepare pre-service and in-service vocational teachers to teach graphic arts skills in printing and duplicating techniques, advertising, display and other modes of graphic communication.
462. DIRECTED WORK EXPERIENCE IN AREA OF SPECIALIZATION (5). LAB. 10. Pr., VED 414. In-service, supervised work experience. Individually designed for part-time and/or summer experience.

466. TEACHING OUT-OF-SCHOOL GROUPS (3). Pr., VED 414. Conducting surveys, occupational analysis, using advisory committees, organizing, conducting and supervising various types of adult education.
469. COMMUNITY PROGRAMS IN ADULT EDUCATION (5). LEC. 4, LAB. 2. Pr., junior standing. VED 513 or COI.
- 475-476-477-478-479-480. TRADE AND TECHNICAL EXPERIENCE (5-5-5-5-5-5). An experience completed by supervised employment or by examination on basis of journeyman level work experience at the maximum rate of 15 quarter hours for each year of such experience. In those occupations where there is no organized apprenticeship experience beyond the level of learner will correspond to starting the curriculum, elective coursework may be substituted for these credits.
485. PRACTICUM (1-15). Provides experiences closely relating theory and practice, usually carried on simultaneously.

### ADVANCED UNDERGRADUATE AND GRADUATE

508. TEACHING MECHANICAL TECHNOLOGY (5). LEC. 3, LAB. 4. Pr., junior standing. Objectives and methods; equipment and management of vocational education shops; organization of projects; recent development in specialized areas of mechanics; in-service teaching problems. Students plan for demonstration of methods for teaching mechanical skills.
510. OCCUPATIONAL INFORMATION (3). LEC. 2, LAB. 2. Pr., junior standing. Occupational structure, job qualifications and requirements, sources of occupational information, current trends, industrial and occupational surveys. Preparation, evaluation and dissemination of occupational information.
513. NATURE OF ADULT EDUCATION (5). Pr., junior standing. History and principles of adult education applied to the development and implementation of programs in remedial, occupational, and continuing education.
520. TEACHING VOCATIONAL EDUCATION TO STUDENT WITH SPECIAL EDUCATION NEEDS (5). Pr., successful completion of program planning and methods courses. Program development resources for teaching vocational skills to students who are economically and educationally disadvantaged or handicapped.
524. ADMINISTRATIVE MANAGEMENT (5). Pr., junior standing. COI. Management of information in many forms, systems design, data collection and processing methods, communications and record management, office physical facilities, other performance standards and control and motivation of personnel.
541. DEVELOPMENT OF VOCATIONAL EDUCATION (4). Pr., junior standing. Historical perspective of the development of vocational education with an overview of its nature and purpose relative to the technological society.
550. CAREER EDUCATION (4). Pr., junior standing. Introduction of career education as a system concept encompassing the entire educational experience in K-14. Emphasis will be given to the interrelated nature of the role of the administrator, the counselor and the classroom teacher in career education.
552. INSTRUCTIONAL PROGRAMS IN THE CONSTRUCTION INDUSTRY (4). LEC. 2, LAB. 4. Pr., VED 414 or 415 or graduate standing. Preparation of teachers to implement various exploratory programs of a hands-on nature that will permit students to gain insight into career opportunities offered by the construction industry.
554. INSTRUCTIONAL PROGRAMS IN THE MANUFACTURING INDUSTRY (4). LEC. 2, LAB. 4. Pr., VED 414 or 415 or graduate standing. Preparation of teachers to implement various exploratory programs of a hands-on nature that will permit students to gain insight into career opportunities offered by the manufacturing industry.
556. LEARNING RESOURCES IN AREA OF SPECIALIZATION (5). Pr., junior standing. (A) Agricultural Education; (B) Industrial Arts Education; (C) Trade and Industrial Education; (D) Marketing Education; (F) Adult Education; (G) Technical Education; (H) Business; (I) Home Economics; and (T) Health.
558. COORDINATION AND SUPERVISION OF VOCATIONAL EDUCATION PROGRAMS IN AREAS OF SPECIALIZATION (5). LEC. 4, LAB. 2. Pr., junior standing. Appropriate relationship between school and on the job programs, including records of coordination, student placement, improving employable skills and habits, recruitment and selection of work experience applicants, work experience rotation, public information and other similar activities.
574. ORGANIZATION OF INSTRUCTION IN VOCATIONAL-TECHNICAL EDUCATION (5). Pr., junior standing. Trade and occupational analysis, principles and procedures of identifying and selecting the skills and knowledge needed in the preparation of courses of instruction. Principles and procedures of individualizing instruction.
581. PROBLEMS IN TEACHING THE DISADVANTAGED ADULT (3-5). Pr., junior standing. Problems of the disadvantaged adult with special emphasis on the unique sociological, psychological and physiological factors that influence learning and participation in remedial learning activities.



## **Zoology and Wildlife Science (ZY)**

Professors Pritchett, *Head*, Bradley, Causey, Dobie, Dusi, G. Folkerts, Mirarchi and Wit  
Adjunct Professors Crozier and Dorgan  
Alumni Associate Professor Sundermann  
Associate Professors Best, Dixon, Henry, Holler, Kempf, Lisano,  
Lishak, Speake and M.C. Wooten  
Adjunct Associate Professors Current, Frandsen, Heck and Williams  
Assistant Professors Armstrong, Bain, Bart, Dobson, Guyer, Hepp,  
Stribling and M.W. Wooten  
Instructors D. Folkerts, Hays and Wester  
Adjunct Assistant Professor Simons

BI 101, 102 and 103 are prerequisite for many courses in this department. For a description of these and other general biology courses, see the section for Biology.

201. MARINE BIOLOGY (6). LEC. 4, LAB. 4. Pr., BI 101, 102 and 103. Summer. The invertebrates, vertebrates and marine plants as communities with emphasis on local examples. Taught only at Dauphin Island Sea Laboratory. Credit may not be earned in both ZY 201 and 436.
205. WILDLIFE CONSERVATION (3). LEC. 3. Fall. The history of wildlife conservation in North America and a presentation of current wildlife conservation problems and practices.
241. INTRODUCTION TO MARINE ZOOLOGY (6). LEC. 3, LAB. 9. Pr., BI 101, 102 and 103. Summer. A general introduction to the marine environment with emphasis on the local fauna. Taught only at the Gulf Coast Research Laboratory. Credit may not be earned in this course and ZY 210 or 307.
250. HUMAN ANATOMY (5). LEC. 4, LAB. 3. Pr., BI 101 or BI 105. All quarters. The structure of the human body combined with a comprehensive study and dissection of a large mammal. Structural similarities and dissimilarities will be emphasized in the laboratory. A common laboratory section will meet one day at the lecture hour and the two-hour dissection laboratories will meet in small groups by sections.
251. PHYSIOLOGY (5). LEC. 4, LAB. 3. Pr., BI 103 or ZY 250. All quarters. Prior credit for ZY 316, 524 or 560 precludes credit for this course. Function of mammalian systems with emphasis on man. Laboratory exercises will provide students with an opportunity to validate functions on laboratory animals.
300. GENETICS (5). LEC. 4, LAB. 3. Pr., BI 101 and college algebra or equivalent. Fall, Winter, Spring. Basic genetic principles, theoretical basis for genetic systems and modern areas of research. Laboratory emphasizes biometrical analysis of experiments using plants and animals. A common laboratory-recitation session will meet on the "fifth day" at the lecture hour and a two-hour data collecting laboratory will meet in small groups by sections.
301. COMPARATIVE ANATOMY (5). LEC. 3, LAB. 6. Pr., BI 103. Winter, Summer. Comparisons of the systems of the vertebrates.
302. VERTEBRATE EMBRYOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103. Fall, Spring. Fertilization, cleavage, morphogenesis, and organogenesis of the frog, chick, pig and human from a descriptive and analytical viewpoint.
303. PRINCIPLES OF EVOLUTION AND SYSTEMATICS (5). LEC. 5. Pr., BI 102 or 103. Fall, Winter, Summer. The major processes, methods and philosophic basis for present day concepts of evolution and systematics.
306. PRINCIPLES OF ECOLOGY (5). LEC. 4, LAB. 3. Pr., 10 hrs. biology or COL. Fall, Spring, Summer. The physical and biotic factors of the environment and the interactions of these with plants and animals. The organization and functions of communities and populations.
307. INTRODUCTION TO OCEANOGRAPHY (6). LEC. 4, LAB. 4. Pr., college algebra, general chemistry and general physics. Summer. The physics, chemistry, biology and geology of the oceans. Taught only at the Dauphin Island Sea Laboratory. Credit may not be earned in both ZY 307 and 435.
310. CELL BIOLOGY (4). LEC. 4. Pr., 10 hours of general biology and CH 207. Fall, Winter. Morphology and physiology of cell membranes, cytoplasm and the formed elements of the cytoplasm and nucleus. Cell division, molecular transport, cellular homeostasis and biochemical pathways of energy production.
- 310L. CELL BIOLOGY LABORATORY (2). LAB. 4. Pr., ZY 310 or concurrently. Fall, Winter. Laboratory exercises in cell biology.
316. PHYSIOLOGY OF DOMESTIC ANIMALS (5). LEC. 4, LAB. 3. Pr., BI 103. Fall, Winter. Prior credit for ZY 251, 524 or 560 precludes credit for this course. Function of mammalian systems with emphasis on domestic mammals. Degree credit may not be earned in both ZY 316 and 251 or 524.
328. PRINCIPLES OF WILDLIFE MANAGEMENT (4). LEC. 4. Pr., a course in ecology. Fall. Fundamentals of wildlife management theory, application and administration.
- 328L. WILDLIFE MANAGEMENT LABORATORY (1). LAB. 3. Pr., ZY 328 or concurrently. Fall. Laboratory experiences in wildlife management.
401. INVERTEBRATE ZOOLOGY (5). LEC. 4, LAB. 4. Pr., BI 103. Winter. Biology of invertebrates.
402. NATURAL HISTORY OF VERTEBRATES (5). LEC. 4, LAB. 4. Pr., BI 103. Natural history of fishes, amphibians, reptiles, birds and mammals. Laboratory experience will be field technique oriented.
425. FOREST WILDLIFE MANAGEMENT (3). LEC. 3. Pr., FY 520 or COL. Winter. Wildlife management as applied to forest properties. Restricted to students in forestry.
433. SEMINAR IN FISH AND WILDLIFE LAW ENFORCEMENT (1). Pr., junior standing. Spring, odd years. A weekly seminar course designed to interface students with professional personnel in the field of fish and wildlife law enforcement. Restricted to students in fisheries, forestry and wildlife management.

435. GENERAL OCEANOGRAPHY (3). LEC. 3. Pr., acceptable physics, chemistry, and mathematics background. Winter, odd years. Physical, chemical and geological characteristics of the oceans, especially as they relate to present understanding of marine ecology and the biological productivity of marine waters.
436. MARINE BIOLOGY (3). LEC. 3. Pr., ZY 306, 401 or equivalents. Winter, even years. Marine organisms and their adaptations to the environment and other organisms with emphasis on the ecology of marine communities.
440. CLINICAL PHYSIOLOGY I (4). LEC. 4. Pr., ZY 250, 251, or equivalents. Coreq., NJR 301. Fall. Consideration of the musculature, the nervous system and the cardiovascular system. Emphasis will be on normal physiological function. Pathological conditions as alterations of normal function will be discussed. Pharmacological treatment of pathological states will be emphasized.
441. CLINICAL PHYSIOLOGY II (4). LEC. 4. Pr., ZY 440. Winter. Consideration of temperature regulation, kidney function, the liver, respiration, endocrinology and digestion. Emphasis will be on normal physiological function. Pathological conditions as alterations of normal function will be discussed. Pharmacological treatment of pathological states will be included.
442. CLINICAL PHYSIOLOGY LABORATORY (1). LAB. 3. Coreq., ZY 441. Winter. Laboratory experiences in systems physiology. Taken concurrently with ZY 441.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for a maximum of six hours credit.
490. WILDLIFE MANAGEMENT INTERNSHIP (5 HRS. PER QUARTER, 15 HRS. MAXIMUM.) COI, SU graded. Provides the student with practical job experience under joint supervision of the internship advisor and appropriate state, federal or private agency. Training will prepare student for potential career employment.
498. SPECIAL PROBLEMS (1-5). A. Zoology; B. Wildlife Management. C. Marine Biology. A student can register for a total of not more than five hours credit.

#### ADVANCED UNDERGRADUATE AND GRADUATE

502. DEVELOPMENTAL BIOLOGY (4). LEC. 4. Pr., ZY 302, 310, 300 or equivalent courses. Fall, even years. Consideration of induction, constancy of the genome, pathfinding by migrating cells and cell processes and morphogenetic movements.
509. HISTOLOGY (5). LEC. 4, LAB. 4. Pr., BI 103. Winter. Morphology and classification of tissues; arrangement of tissues in organs and systems of vertebrate animals.
511. GENERAL PARASITOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103 or ZY 250 and 251. Spring, Summer. Origin, adaptations, physiology and ecology of parasites. Identification and life histories of representative parasitic protozoa, helminths and arthropods with emphasis on host-parasite relationships.
516. STUDIES IN FIELD BIOLOGY AND ECOLOGY (8). Pr., major or minor in a biological field. COI. Offered in intervals between quarters. Students should register for the course during the quarter immediately before. Intensive field studies of an area outside Alabama. A travel fee, in addition to tuition will be charged.
517. PRINCIPLES OF POPULATION GENETICS (5). LEC. 4, LAB. 3. Pr., ZY 300. Spring, even years. The origin, maintenance and expression of genetic variability in natural populations. Designed especially for students planning to work with populations of organisms, whether with aspects of management, breeding or control.
518. MON-MENDELIAN GENETICS (3). Pr., ZY 300. Fall. Current status of behavioral, cytogenetic, cytoplasmic, developmental and recombinational genetics.
519. MOLECULAR GENETICS (3). Pr., ZY 300. Fall, even years. Current status of molecular genetics; nucleic acids, regulation, mutagenesis and immunology will be considered.
520. HUMAN GENETICS (5). LEC. 5. Pr., ZY 300, CH 208. Spring, odd years. Effects of normal and abnormal chromosome complements, the biological interaction of genes, and the effects of mutation and changes in gene frequency on human populations; problems in small sample analysis, biochemical screening of human "carriers," and the prospects for genetic engineering.
524. ANIMAL PHYSIOLOGY (5). LEC. 4, LAB. 3. Pr., 10 hrs. advanced zoology and organic chemistry. Winter, Summer. General physiological principles common to animals of various vertebrate taxa illustrated with examples that are most demonstrative. An effort is made to include unique physiological adaptations.
527. WILDLIFE PHILOSOPHY AND POLICY (3). LEC. 3. Pr., a course in natural resource management. Fall. Examination of attitudes, philosophies and policies that govern management of the wildlife resource. Modern methods used in dealing with the public to implement wildlife policies. Intended for students interested in employment with public or private agencies dealing with natural resources.
528. WILDLIFE BIOLOGY (5). LEC. 5. Pr., ZY 328 or concurrent. Winter. The ecology and management of selected wildlife species of the U.S. Emphasis on natural history, census methods and management strategies.
- 528L. WILDLIFE BIOLOGY LABORATORY (2). LAB. 6. Pr., ZY 528 or concurrent. Winter. Practical laboratory exercises designed to acquaint the student with modern methodology and techniques in studying wild bird and mammal populations.
529. WILDLIFE DAMAGE CONTROL (3). LEC. 3. Pr., 10 hours of wildlife ecology and management. Winter, alternate years. Examination of the principles and methods for controlling problems and damage caused by wildlife. Extension and research consideration will be reviewed. Intended for students interested in employment with public or private agencies dealing with wildlife resources.
531. WILDLIFE HABITAT ANALYSIS (3). LEC. 1, LAB. 6. Pr., ZY 528, BY 506. Spring. Practical exercises in vegetation analysis, utilization studies, aerial photograph interpretation and cover type mapping.
536. COMMUNITY ECOLOGY OF MARINE ECOSYSTEMS (3). LEC. 3. Pr., ZY 435 or COI. Spring, odd years. The ecology of coastal and oceanic ecosystems. The dynamics and regulation of population distribution and abundance within terrestrial, intertidal, and subtidal communities.

538. GENERAL ICHTHYOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103. Fall. Survey of functional morphology, classification and distribution of fishes. Introduction to faunistic literature of North America and the world. Identification of fishes from the Gulf of Mexico and North American fresh waters.
540. WETLAND BIOLOGY (5). LEC. 4, LAB. 4. Pr., ZY 306 or equivalent. Spring, even years. Ecology and biota of freshwater and estuarine wetland habitats with emphasis on North American wetlands. Discussion of practical and theoretical issues related to the conservation, management and maintenance of freshwater and estuarine wetlands. One weekend field trip and one longer field trip required. All students will be required to write a research paper.
542. MARINE FISHERIES MANAGEMENT (6). LEC. 3, LAB. 9. Pr., 18 hours of biology, including BI 103. Summer. Fisheries management philosophy, objectives, problems and principles involved in management decisions. Offered only at the Gulf Coast Laboratory, Ocean Springs, Mississippi.
543. MARINE VERTEBRATE ZOOLOGY AND ICHTHYOLOGY (9). LEC. 5, LAB. 12. Pr., 18 hours of biology, including BI 103. Summer only. The marine chordata, including lower groups and the mammals and birds, with most emphasis on the fishes. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, Mississippi.
545. MARINE INVERTEBRATE ZOOLOGY (9). LEC. 5, LAB. 12. Pr., 18 hours biology, including BI 103 and ZY 501. Summer. The marine invertebrates, especially those of the Mississippi Sound region. Emphasis is placed on the structure, classification, phylogenetic relationships and functional processes. Offered only at the Gulf Coast Laboratory, Ocean Springs, Mississippi.
548. MARINE ECOLOGY (7.5). LEC. 3, LAB. 6. Pr., BI 102, ZY 501 and acceptable chemistry. Summer. The relationship of marine organisms to their environment and the effects of the environment on the abundance and distribution of marine organisms. Offered only at the Gulf Coast Laboratory, Ocean Springs, Mississippi.
550. ZOOGEOGRAPHY OF THE VERTEBRATES (5). LEC. 4, LAB. 3. Pr., ZY 521, or COI. Spring, odd years. Principles of geographic distribution of vertebrate animals.
551. MARINE INVERTEBRATE ZOOLOGY (6). LEC. 4, LAB. 4. Pr., BI 103 plus 10 hours of zoology at the 200-level or above. Summer. The natural history, systematics and morphology of marine invertebrates from a variety of habitats in the Gulf of Mexico, oriented toward a field and laboratory approach. Participation in extended field trips is part of the course. Taught only at the Dauphin Island Sea Lab.
553. MARINE VERTEBRATE ZOOLOGY (6). LEC. 4, LAB. 4. Pr., BI 101, 103 and COI. Summer. The systematics, zoogeography and ecology of marine fishes, reptiles, and mammals. Taught only at the Dauphin Island Sea Laboratory. May not be substituted for ZY 521 and/or 522.
554. COASTAL ORNITHOLOGY (6). LEC. 3, LAB. 9. Pr., ZY 522. Summer. Coastal and pelagic birds with emphasis on ecology, taxonomy and distribution. Taught only at the Dauphin Island Sea Laboratory. May not be substituted for ZY 605.
555. MARINE ECOLOGY (6). LEC. 3, LAB. 9. Pr., ZY 306, college physics and chemistry and COI. Summer. Bioenergetics, community structure, population dynamics, predation, competition and speciation in marine ecosystems. Taught only at the Dauphin Island Sea Lab.
556. BEHAVIOR AND NEUROBIOLOGY OF MARINE ANIMALS (6). LEC. 5, LAB. 10. Pr., 20 hours of zoology, psychology and COI. Survey of the behavior, neuroanatomy and neurophysiology of selected marine invertebrates and vertebrates. Taught only at the Gulf Coast Research Laboratory.
558. MARINE BIOLOGY FOR TEACHERS (9). LEC. 12, LAB. 18. Pr., BI 101, 102, 103, COI. Summer. Introduction to the marine environment and marine organisms, their behavior and ecology, for teachers. Taught at the Dauphin Island Sea Lab. This is a five-week course.
560. MAMMALIAN PHYSIOLOGY I (5). LEC. 4, LAB. 3. Pr., CH 208, ZY 250 or equivalent and ZY 310 or biochemistry. Fall, Spring. A treatment of cellular bioelectric phenomena, muscle contractility, neurophysiology and cardiovascular physiology. Laboratory will utilize modern methodology for the observation of physiological fact.
561. MAMMALIAN PHYSIOLOGY II (5). LEC. 4, LAB. 3. Pr., ZY 560 or equivalent. Winter, Summer. A continuation of ZY 560 with emphasis upon respiratory, renal, digestive, metabolic and endocrine physiology.
565. ETHOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 306, 522, 524 or COI. Spring. Animal behaviors, analysis of their adaptive values, development and evolution.
574. HERPETOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Spring, Summer. Systematics, ecology and behavior of amphibians and reptiles.
575. ORNITHOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Spring. Systematics, ecology and behavior of birds.
576. MAMMALOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Winter. Systematics, behavior and ecology of mammals.
580. SPECIAL TOPICS IN MARINE BIOLOGY (1-5) Pr., COI. Comprehensively directed studies relating to marine biology. Taught at the Dauphin Island Sea Lab.



# Faculty and Staff

1991-92

*(The parenthetical designation after a faculty member's title indicates the department. The first date after the title indicates the year of first appointment to any position in the institution; the second, the year of appointment of present rank.)*

## GENERAL ADMINISTRATIVE OFFICERS

- MARTIN, JAMES E., President, 1984. B.S., Auburn; M.S., N. Carolina St.; Ph.D., Iowa State  
EMERT, GEORGE H., Executive Vice President, 1984. B.A., Colorado; M.A., Colorado St.; Ph.D., Va. Tech  
BARNES, PAT H., Vice President for Student Affairs, 1985. B.A., Texas Woman's; M.Ed., Ed.D., Auburn  
BUSTA, JOSEPH F., JR., Vice President for Advancement, 1990. B.S., Auburn; M.S., Tennessee; Ph.D., Florida  
BLACKBURN, JACK E., Vice President for Academic Affairs, 1975, 1991. B.S., FSU; M.A., Peabody; Ed.D., New York  
PARKS, PAUL F., Vice President for Research & Professor (An. & Dairy Sci.), 1965, 1981. B.S., M.S., Auburn; Ph.D., Texas A&M  
THOMPSON, ANN E., Vice President for Extension & Director, Alabama Cooperative Extension Service, 1984, 1986. B.S., Auburn; M.A., Maryland; Ed.D., Oklahoma State  
DYE, PATRICK F., Director, Athletics & Head Football Coach, 1981. B.S., Georgia  
ARMSTRONG-WRIGHT, DEBRA A., Executive Director, Affirmative Action/Equal Employment Office, 1990. B.A., M.Ed., Auburn; J.D., Alabama  
FROBISH, LOWELL T., Executive Director, Agricultural Experiment Station, 1986. B.S., Illinois; M.S., Ph.D., Iowa State  
LEISCHUCK, EMILY R., Assistant to the President, 1974, 1983. B.S., Alabama; M.Ed., Auburn  
LEISCHUCK, GERALD S., Executive Director, Planning & Analysis, & Secretary to the Board of Trustees, 1962, 1966. A.B., M.A., N. Colorado; Ed.D., Auburn  
SAMFORD, THOMAS D., III, University General Counsel, 1988. A.B., Princeton; J.D., Alabama  
WHITE, J. HERBERT, Executive Director, University Relations, 1960, 1983. B.S., Auburn  
WILSON, E. HAMILTON, Executive Director, Governmental Affairs, 1985. B.S., Auburn

## ACADEMIC ADMINISTRATIVE OFFICERS AND FACULTY

- MARION, JAMES E., Dean of Agriculture, 1988. B.S., Berea; M.S., Kentucky; Ph.D., Georgia  
PARKER, RAY K., Dean & Professor of Architecture, 1988. B.S., Arizona State; B.Arch., Auburn; M.Arch., Rice  
BELLENGER, DANNY K., Dean of Business, 1989. B.S., M.Sc., Ph.D., Alabama  
KUNKEL, RICHARD C., Dean of Education, 1990. B.S.Ed., N.E. Missouri State; M.Ed., Missouri; Ph.D., State Louis  
WALKER, WILLIAM F., Dean of Engineering, 1988. B.S., M.S., Texas; Ph.D., Oklahoma State  
THOMPSON, EMMETT, Dean & Professor of Forestry, 1977, 1985. B.S., Oklahoma State; M.S., N. Carolina State; Ph.D., Oregon State  
HENTON, JUNE M., Dean of Human Sciences & Professor (Fam. & Child Dev.), 1985. B.S., Oklahoma State; M.S., Nebraska; Ph.D., Minnesota  
HILEY, DAVID R., Acting Dean of Liberal Arts, 1991. B.A., Auburn; Ph.D., Georgia  
KITCHENS, EDETH K., Dean of Nursing, 1989. B.S.N., UAH; M.S.N., UAB; Ph.D., Alabama  
LEGG, J. IVAN, Dean of Sciences & Mathematics, 1987. B.A., Oberlin; Ph.D., Michigan  
CAMPBELL, WILLIAM H., Dean of Pharmacy, 1988. B.S., M.S., Oregon State; Ph.D., Purdue  
VAUGHAN, JOHN T., Dean of Veterinary Medicine, 1974, 1977. D.V.M., M.S., Auburn  
DOORENBOS, NORMAN J., Assistant Vice President, Academic Affairs & Dean & Professor, Graduate School, 1986. B.S., M.S., Ph.D., Michigan  
ABBETT, VANCE N., Adjunct Instructor (Polit. Sci.), 1986, 1987. B.S., Troy St.; J.D., Jones Law  
ABBOT-KING, JANET P., Research Specialist, Athletic Dept., 1985, 1990. B.S., Missouri; M.Ed., Auburn  
ABERNETHY, AVERY M., Assistant Professor (Market. & Transp.), 1988. B.S., B.A., N. Carolina; Ph.D., S. Carolina  
ABNER, SUE E., Administrative Assistant II (Chemical Engr.), 1977  
ACCURSO, DIANA L., Librarian II, Library, 1990. A.B., Amherst; M.S., Illinois  
ADAMS, JAMES F., Assistant Professor (Ag. & Soils), 1985. B.S., M.S., Auburn; Ph.D., Kansas State  
ADAMS, JAMES W., Associate Professor (Market. & Transp.), 1969. B.B.A., M.B.A., D.B.A., Georgia State  
ADAMS, MURRAY C., Associate Professor (Sociology), 1969, 1989. B.A., M.A., Mississippi; Ph.D., Kentucky  
ADERHOLT, JOSEPH M., Specialist (Chemical Engr.), 1983  
ADERHOLDT, ROBERT W., Professor, (Build. Sc.), 1980, 1983. B.M.E., M.S., Auburn; Ph.D., Georgia Tech  
ADKINS, BENNIE G., Instructor, Facilities, 1990. B.S., M.S., M.S., Troy State  
ADKINS, KENNETH N., Instructor (Market. & Transp.), 1988. B.A., Methodist; M.B.A., Florida Inst. Tech  
ADRIAN, JOHN L., Professor (Ag. Econ. & Rural Soc.), 1974, 1984. B.A.A., M.S., Auburn; Ph.D., Tennessee  
ALBEE, RICHARD D., Art Coordinator, University Relations, 1986. B.F.A., Auburn  
ALBERT, LLOYD, Superintendent, Facilities, 1984, 1989  
ALBERTSON, PATRICIA, Management Scientist, Ext. Affairs/ATAC, 1988. B.S., Juniata; M.B.A., Pennsylvania  
ALBRECHT, ULRICH F., Associate Professor (Math-ACA), 1984, 1987. B.S., M.S., Essen; Ph.D., New Mexico State; Ph.D., Dulburg  
ALDERMAN, CHARLES W., Director & Professor (Accountancy), 1977, 1990. B.S., M.B.A., Auburn; D.B.A., Tennessee  
ALDRIDGE, CLARK, Director, Student Financial Aid, 1990. B.S., M.Ed., Northwest State  
ALDRIDGE, M. DAYNE, Associate Dean, Dir. & Professor (Adm.-Engineering), 1984, 1988. B.S., W. Virginia; M.E.E., D.Sc., Virginia



## Faculty and Staff

- ALEXANDER, DAVID E., Associate Professor (Music), 1972, 1984. B.M., M.M., Texas
- ALEXANDER, MARGARET K., Librarian II, Library, 1987. B.S., M.Ed., Tuskegee; M.S.L.S., Catholic
- ALEXANDER, MILTON J., Professor (Management), 1968. B.S., Illinois; M.B.A., State Louis; D.B.A., Georgia State
- ALEXANDER, VANCE L., Associate Professor (Clin. Pharm.), 1981. B.S., M.S., Houston; J.D., Bham Sch. of Law
- ALFORD, WILLIAM L., Associate Dean (Sciences & Mathematics) & Director, Nuc. Sc. Ctr., 1952, 1986. B.A., Vanderbilt; M.S., Ph.D., Cal. Tech
- ALLEN, BARBARA Y., Assistant to the Dean I (Adm.-Pharmacy), 1977
- ALLEN, EARL R., Manager, Property Control, 1983, 1988. B.S., Auburn
- ALLEN, GEORGE W., Manager (Mechanical Engr.), 1979, 1990
- ALLEN, JUDY R., Administrative Assistant II (Zoology-Wildlife Science), 1981, 1986
- ALLEN, SARA L., Administrative Assistant III, Housing & Res. Life, 1975, 1985
- ALLGOOD, SCOT M., Assistant Professor (Fam. & Child Dev.), 1988. B.S., Weber State; M.S., Montana State; Ph.D., BYU
- ALVAREZ, NICOLAS E., Associate Professor (For. Lang.), 1989. B.A., Puerto Rico; M.A., Ph.D., Berkeley
- ALVERSON, THELMA B., Academic Advisor I (Adm.-Sci. & Math), 1982, 1990. B.S., Auburn
- ALVERSON, WILLIAM J., Assistant Dean (Agriculture), 1965, 1983. B.S., M.Ed., Auburn
- ANDELSON, ROBERT V., Professor (Philosophy), 1965. A.B. equiv., Chicago; A.M., Ph.D., S. California
- ANDERSON-HARPER, HEIDI, Assistant Professor (Pharm. Care Syst.), 1989. B.S., M.S., Ph.D., Purdue
- ANDERSON, GLENN A., Librarian III, Library, 1978, 1989. B.A., M.A., SUNY; M.L.S., Florida State
- ANDERSON, LENDA J., Associate Professor & Ext. Spec. (Cons. Affairs), 1980, 1989. B.S., Louisiana Tech
- ANGARANO, DONNA W., Associate Professor (Sm. An. Surg. & Med.), 1986. B.S., D.V.M., Missouri
- APPEL, ARTHUR G., Associate Professor (Entomology), 1985. B.A., UCLA; M.S., Ph.D., Calif.-Fliverside
- ARMENAKIS, ACHILLES, Associate Dean & Professor (Business), 1973, 1986. B.S., M.B.A., La. Tech; D.B.A., Miss. State
- ARMSTRONG-WRIGHT, DEBRA A., Executive Director, Affirmative Action/Equal Employment Office, 1990. B.A., M.Ed., Auburn; J.D., Alabama
- ARMSTRONG, LEE F., University Counsel, President's Office, 1989. B.S., J.D., Alabama
- ARMSTRONG, JAMES B., Extension Specialist & Assistant Professor (Zoology-Wildlife Sci.), 1990. B.S., Freed-Hardeman; M.S., Abilene Christian; Ph.D., Virginia Polytech
- ASH, BARBARA H., Assistant Professor (Curr. & Teaching), 1982, 1986. B.A., Marshall; M.A., SUNY; Ph.D., Florida State
- ASKEW, JAMES C., Associate Superintendent of Grounds, 1982, 1986. B.A., Alabama; B.S., M.S., Auburn
- ASKEW, RAYMOND F., Director, Space Power Institute, 1960, 1987. B.S., Birmingham Sou.; M.S., Ph.D., Virginia
- ASMUTH, SHAWN C., Director, Accounts Payable, 1981, 1989. B.S., Auburn
- ATKINS, GEORGE A., Associate Director, Alumni & Devel., 1982, 1987. B.S., Auburn
- ATKINS, LEAH R., Director, Center for Arts & Humanities, 1985. B.S., M.A., Ph.D., Auburn
- ATKINSON, ROBERT L., Librarian II, Library, 1988. B.A., Mississippi; M.L.S., Vanderbilt
- AULL, JOHN L., Professor (Chemistry), 1974, 1988. A.B., N. Carolina; Ph.D., N. Carolina State
- AULL, JUDY C., Academic Advisor II (Comp. Sc. & Engr.), 1980, 1987. B.A., Auburn
- AULT, RICHARD W., Associate Professor (Economics), 1983, 1989. A.B., W. Virginia; Ph.D., Virginia
- AVERY, ARTHUR W., Associate Dean & Professor (Adm.-Human Sciences), 1985. B.A., M.S., Ph.D., Penn State
- AVERY, ALEXANDER H., Director, Engr. Extension, 1972. B.S., Auburn; M.S., Purdue
- AYCOCK, GEORGIA P., Ext. Spec. & Assistant Professor (Cons. Affairs), 1974, 1982. B.S., M.Ed., Auburn
- BACKMAN, PAUL A., Professor (Plant Pathology), 1971, 1983. Ph.D., California
- BAGINSKI, MICHAEL E., Assistant Professor (Elec. Engr.), 1985. B.S., M.S.E.E., Ph.D., Penn State
- BAGINSKI, THOMAS A., Associate Professor (Elec. Engr.), 1984. B.S., M.S., Ph.D., Penn State
- BAGWELL, KEITH T., Assistant Director, SAC/Coliseum, 1990. B.A., B.S., Auburn
- BAILEY, ALVIN C., Adjunct Associate Professor, Tillage Lab, 1982. B.S., Michigan State; M.S., Illinois; Ph.D., Auburn
- BAILEY, BLISS N., Specialist I, Academic Computing, 1989. B.S., New Orleans
- BAILEY, CHERYL D., Instructor (English), 1990. B.S., Auburn
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- BAILEY, WILFORD S., President Emeritus & University Professor, (Pathobiol.), 1942, 1986. D.V.M., M.S., Auburn; Sc.D., Johns Hopkins
- BAILEY, WILLIAM H., Assistant Professor (Geography), 1989, 1990. A.B., M.A., Georgia; Ph.D., Tennessee
- BAIN, MARK, Assistant Professor (Fish. & Allied Aquacultures), 1986. B.S., W. Virginia; M.S., VPI; Ph.D., Massachusetts
- BAIRD, AUBREY N., Assistant Professor (Lg. An. Surg. & Med.), 1990. D.V.M. Auburn; M.S., Texas A&M
- BAIRD, HARRY B., Baseball Coach, Athletic Dept., 1984. B.S., M.A., E. Carolina
- BAIRD, SAMERA M., Assistant Professor (Rehab. & Special Ed.), 1985, 1987. B.S., M.A., Tennessee; Ph.D., Texas
- BAIRD, WILLIAM E., Associate Professor (Curr. & Teach.), 1985. B.S., M.S., Tennessee; Ph.D., Texas
- BAKER, CLINTON A., Professor (Market. & Transp.), 1974, 1983. B.S., Louisville; M.B.A., D.B.A., Indiana
- BAKER, JACQUELINE J., Administrator, Space Power Institute, 1966, 1985
- BAKER, JANET M., Manager, Registrar's Office, 1973
- BAKER, R. TERRY K., Professor (Chem. Engr.), 1986. A.R.I.C. Liverpool Poly
- BAKER, RICHARD A., Professor & Director (Voc. & Adult Ed.), 1963, 1989. B.S., M.Ed., Auburn; Ed.D., Oklahoma State
- BAKER, ROYCELL, Superintendent, Coliseum, 1976, 1986
- BALACHANDRAN, SAROJINI, Librarian III, Library 1988. B.Sc., M.A., Madras; M.S.L.S., Illinois; M.S., Indiana State
- BALDWIN, STEWART L., Associate Professor (Math-FAT), 1981, 1989. B.A., Ph.D., Colorado
- BALL, DONALD M., Ext. Agronomist & Professor (Ag. & Soils), 1976, 1988. B.S., W. Kentucky; M.S., Ph.D., Auburn
- BANCROFT, WILLIAM B., Instructor (English), 1988. B.A., Covant; M.A., Auburn; Ph.D., California
- BANNON, SUSAN H., Assistant Professor (EFLT), 1985. B.S., M.Ed., Auburn; Ed.D., LSU

## Faculty and Staff

- BAREFIELD, MICHAEL S., Laboratory Supervisor (Mech. Engr.), 1989.
- BARKER, KENNETH N., Professor & Head (Pharm. Care Sys.), 1975. B.S., Florida; Ph.D., Mississippi
- BARKER, LARRY L., Professor (Communication), 1975. B.A., M.A., Ph.D., Ohio
- BARKER, WANDA B., Manager, Student Info. Svcs., 1975.
- BARNARD, STEVEN, Assistant Director, Student Finan. Aid, 1990. B.S., Auburn; M.S., Troy State; M.A., Pepperdine
- BARNES, PATSY H., Vice President for Student Affairs, 1973. 1985. B.S., Texas Woman's U; M.Ed., Ed.D., Auburn
- BARNES, PETER A., Walter Professor (Physics), 1984. B.A.Sc., M.Sc., Waterloo; Ph.D., Simon Fraser
- BARNES, SHIRLEY L., Career Counselor, Student Dev. Svcs., 1988. B.A., Auburn; M.Ed., Tuskegee
- BARNETT, ANDY H., Associate Professor (Economics), 1982. B.A., Presbyterian; M.A., Clemson; Ph.D., Virginia
- BARRETT, BEVERLY A., Counselor, Student Devel. Svcs., 1988. B.S., N. Michigan; M.S., Wisconsin
- BARROW, DEBORAH J., Assistant Professor (Polit. Sci.), 1986. B.A., M.A., Georgia State; Ph.D., Emory
- BARRY, MARY E., Associate Professor (Cons. Affairs), 1973, 1983. B.S., St. Joseph; M.S., NYU; Ed.D., Temple
- BARRY, NANCY H., Assistant Professor (Curr. & Teaching), 1990. B.M., Mid. Tennessee State; M.M., Ph.D., Florida State
- BART, HENRY L., Assistant Professor (Zool.-Wildl. Sci.), 1988. B.S., M.S., New Orleans; Ph.D., Oklahoma
- BARTELS, JAN E., Professor & Head (Radiology), 1967. B.S., Oregon State; D.V.M., Washington State; M.S., Guelph
- BARTH, JAMES R., Lowder Professor (Finance), 1989. B.A., Calif. State; M.A., New Mexico; Ph.D., Ohio State
- BARTLETT, TOMMY, Specialist II, Alumni & Development, 1990. B.S., Athens State
- BARTOL, FRANK F., Associate Professor (An. & Dairy Sci.), 1983, 1989. B.S., Va. Tech; M.S., Ph.D., Florida
- BASKIN, EVELYN, Assistant Professor (Mechanical Engineering), 1990. B.S., M.S., Tuskegee; Ph.D., Alabama
- BASS, DAVID M., Assistant Director, Admissions, 1988. B.S., M.Ed., Auburn
- BASS, WILLIAM T., Research Specialist (Plant Path.), 1990. B.S., Sou. Mississippi
- BASTIEN, DAVID W., Assistant Professor (Naval Sci.), 1988. B.S., Citadel
- BATES, EDNA L., Manager, Food Svcs., 1964.
- BAVIS, JOHN M., Assistant Professor (Military Sci.), 1990. B.A., Norwich Military
- BAYNE, DAVID R., Associate Professor (Fish. & Allied Aquacul.), 1972. B.A., Tulane; M.S., Ph.D., Auburn
- BEALE, DAVID G., Assistant Professor (Mech. Engr.), 1989. B.S., Michigan Tech; M.S.T., Ph.D., Michigan
- BEALS, HAROLD O., Associate Professor (Forestry), 1960. B.S., M.S., Ph.D., Purdue
- BEARD, ATHA A., Assistant Professor (Accountancy), 1963. B.S., M.B.A., Auburn
- BEARD, THOMAS R., Assistant Professor (Economics), 1988. B.A., Tulane; Ph.D., Vanderbilt
- BEASLEY, RACHEL L., Instructor (Rehab. & Spec. Educ.), 1990. B.S., Troy State; M.S., Auburn
- BEATY, ROBERT E., Assistant Professor (Elec. Engr.), 1988. B.S.E.E., M.S.E.E., Ph.D.E.E., Purdue
- BEAUDOIN, ROBERT E., Assistant Professor (Math-FAT), 1984. B.S., Clemson; A.M., Ph.D., Dartmouth
- BECK, DIANE E., Associate Professor (Clin. Pharm.), 1979, 1985. B.S.Pharm., Pharm.D., Florida
- BECKER, THEODORE L., Professor & Head (Polit. Sci.), 1988. B.A., L.L.B., Rutgers; M.A., Maryland; Ph.D., Northwestern
- BECKETT, ROYCE E., Professor (Mech. Engr.), 1977, 1988. B.S., M.E., M.S., Illinois; Sc.D., Washington-St. Louis
- BECKETT, SIDNEY D., Associate Dean (Adm.-Vet Med), 1966. B.S., Miss. State; Ph.D., Missouri; D.V.M., M.S., Auburn
- BECKHAM, LOU ANNE W., Assistant Director, Alumni & Devel., 1990. B.A., Auburn
- BECKWITH, GUY V., Associate Professor (History), 1980, 1988. B.A., M.A., Ph.D., California
- BECKWITH, WILLIAM H., Ticket Manager, Athletic Dept., 1951. B.S., Auburn
- BEHE, BRIDGET K., Associate Professor & Ext. Spec. (Horticulture), 1989. B.S., Ph.D., Penn State; M.S., Ohio State
- BEIL, RICHARD O., Assistant Professor (Economics), 1988. B.B.A., Texas Tech; M.S., M.S., N. Texas State; Ph.D., Texas A&M
- BELK, MARY, Instructor (Sociology), 1990. B.A., Auburn
- BELL, C. REBECCA, Assistant Director, Resident Ed., Housing & Res. Life, 1984, 1989. B.A., M.Ed., Auburn
- BELL, FREDRICK A., Producer/Director II, Telecom. & ETV, 1989. B.S., Montevallo
- BELL, JOSEPH J., Director, Facilities, 1986, 1990.
- BELL, LINDA W., Marketing Manager (Theatre), 1989. B.F.A., Auburn
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- COSS, ARTHUR F., Professor and Department Head Emeritus, Elementary Ed., October, 1981. B.E., N. Illinois; M.A., Northwestern; Ed.D., Indiana
- CURRENT-GARCIA, ALVA, Associate Professor Emerita, Fam. & Child Dev., September, 1978. A.B., Randolph-Macon; M.S., Nebraska
- CURRENT-GARCIA, EUGENE, Hargis Professor Emeritus, English, January, 1979. A.B., M.A., Tulane; A.M., Ph.D., Harvard

- DANION, JAMES R., Professor Emeritus, An. & Dairy Sci., October, 1990. B.S., M.S., Georgia; Ph.D., Auburn
- DANNER, MAURICE, Professor Emeritus, Ag. Ec. & Rural Soc., November, 1978. B.S., Texas Tech; M.S., Tennessee
- DAVIS, DONALD E., Professor Emeritus, Bot., Pl. Pathol. & Microbiol., April, 1982. B.Ed., Ped.D., E. Illinois; M.S., Ph.D., Ohio St.
- DAVIS, NORMAN D., Professor Emeritus, Bot. & Microbiol., June, 1990. B.S., Georgia; M.S., Ph.D., Ohio St.
- DAVIS, W. L., Professor Emeritus, Education, July, 1975. B.S., Mid. Tenn. St.; M.A., Peabody; Ed.D., Columbia
- DECKER, HAROLD R., Associate Professor Emeritus, Aersp. Engr., January, 1979. B.S.Ed., NE Missouri St.; M. Litt; Pittsburgh
- DENDY, JOHNS., Professor Emeritus, Zool.-Entomol. & FAA, September, 1978. B.S., Presbyterian; M.A., N. Carolina; Ph.D., Michigan
- DeVALL, WILBUR B., Professor Emeritus, Forestry, February, 1978. B.S., New York St. Forestry; M.S., Florida
- DIENER, URBAN, Professor Emeritus, Pl. Pathol., October, 1987. B.A., Miami-Ohio; M.A., Harvard; Ph.D., N.C. St.
- DONNELLY, EDWARD D., Professor Emeritus, Ag. & Soils, January, 1984. B.S., M.S., Auburn; Ph.D., Cornell
- DOUTY, HELEN IRENE, Associate Professor Emerita, Cons. Affairs, June, 1986. B.S., M.S., Cornell; Ph.D., FSU
- DUFFIELD, FRANCES J., Associate Professor Emerita, Consumer Affairs, June, 1990. B.S., Montana St.; M.S., Va. Tech.; Ph.D., Tennessee
- DRAGOIN, ANTHONY, Associate Professor Emeritus, HHP, June, 1988. B.S., M.S., Auburn; Ed.D., Alabama
- DUGGER, FOWLER, JR., Editor Emeritus, July, 1987. B.A., Alabama; M.A., Duke
- DUMAS, WILLIAM T., Associate Professor Emeritus, Ag. Engr., October, 1983. B.M., M.S., Auburn
- EDGAR, SAMUEL A., Professor Emeritus, Poultry Sci., July, 1986. A.B., Sc.D., Sterling; M.S., Kansas St.; Ph.D., Wisconsin
- EDWARDS, CHARLES WESLEY, Registrar Emeritus, June, 1986. B.S., Auburn; M.A., Harvard
- ELIJOSOR, MILDRED R., Professor Emerita, Elem. Ed., June, 1978. A.B., Huntington; M.A., Ed.D., Columbia
- ENSMINGER, LEONARD E., Professor Emeritus, Ag. & Soils, January, 1979. B.S., Missouri; Ph.D., Illinois
- EVANS, EMERSON M., Associate Professor Emeritus, Ag. & Soils, October, 1983. B.S., Auburn; M.S., Cornell
- FEASTER, WILLIAM M., Professor Emeritus, Elect. Engr., October, 1988. B.S.E.E., M.S.E.E., Auburn
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- FLUKER, BILLIE J., Associate Professor Emeritus, Mech. Engr., June, 1987. B.S.E.E., M.S.M.E., Texas A&M; Ph.D., Tulane
- FORTENBERRY, CHARLES N., Professor Emeritus, Polit. Sci., July, 1979. B.A., M.A., Mississippi; Ph.D., Illinois
- FOURIER, ARTHUR E., Professor Emeritus, HPR, November, 1982. B.S., Illinois; M.A., Ph.D., Peabody
- FOY, JAMES E., Dean Emeritus, Student Affairs & Professor Emeritus, Counselor Ed., April, 1978. A.B., M.A., Alabama; Ph.D., Michigan St.
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- FUNCHESS, UNWOOD E., Director Emeritus, Buildings & Grounds, July, 1977. B.S., Auburn; M.S., Cornell
- GALBRAITH, RUTH L., Dean Emerita, Human Sciences & Professor Emerita, Cons. Affairs, September, 1985. B.S., Ph.D., Purdue
- GOGGANS, JAMES FLOYD, Professor Emeritus, Forestry, August, 1984. B.S., Georgia; M.F., Duke; Ph.D., N.C. St.
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- GUERIN, WILLIAM H., Campus Planner & University Architect Emeritus, January, 1982. B.Arch., Florida
- HALE, DENNIS P., Associate Professor Emeritus, Account. & Fin., June, 1985. B.S., Mid. Tenn. St.; M.A., Peabody
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- HAYHURST, DONALD E., Professor Emeritus, Polit. Sci., September, 1988. A.B., M.Litt., Ph.D., Pittsburgh
- HAYNES, L. J., Professor Emeritus, Tech. Svc., Director Emeritus, Industrial Lab., October, 1978. B.S., M.S., Auburn; Ed.D., Bradley
- HAWKINS, GEORGE E., Professor Emeritus, An. & Dairy Sci., October, 1982. B.S., W. Kentucky; M.S., Georgia; Ph.D., N.C. St.
- HENRY, JOHN F., Professor Emeritus, Management, January, 1986. B.I.M., Auburn; M.S.I.M., Ga. Tech; Ph.D., Alabama
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- HINTON, WILBUR, Professor Emeritus, Music, July, 1984. B.M., M.A., Ed.D., Alabama
- HIRTH, LEO J., Professor Emeritus, Chem. Engr., January, 1990. B.S., CCNY; M.S., Ph.D., Texas
- HOBBS, EDWARD H., Dean Emeritus, Arts & Sciences, & Professor Emeritus, Polit. Sci., October, 1988. A.B., N. Carolina; M.A., Alabama; Ph.D., Harvard
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LIVERMAN, JOHN HUBERT, Professor Emeritus, Music, June, 1980. B.S., M.A., Columbia  
LIVINGSTON, KNOX, Associate Professor Emeritus, Forestry, January, 1978. B.S., S. Carolina; M.F., Duke  
LORENDO, JANE C., Associate Professor Emerita, Cons. Affairs, June, 1983. B.S., Minnesota; M.S., Auburn  
LYLE, EVERETT S., JR., Associate Professor Emeritus, Forestry, January, 1986. B.S., Georgia; M.F., Duke; Ph.D.,  
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MARSHALL, NORTON L., Professor Emeritus, Bot. & Microb., June, 1988. B.S., Penn St.; M.S., Ph.D., Maryland  
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Alabama  
MARTY, EDWARD C., Professor Emeritus, Build. Tech., June, 1972. B. Arch., M.Arch., Auburn  
McCLUNG, JAMES D., Associate Professor Emeritus, Engr. Graphics & Tech. Svcs., June, 1979. B.S., Ed.M.,  
Oklahoma  
McLEOD, FRANCES R., Associate Professor Emerita, English, July, 1975. A.B., Huntington; M.S., Auburn  
McPHEETERS, E. KEITH, Professor Emeritus & Dean Emeritus, Architecture, June, 1989. B.Arch., Oklahoma; M.F.A.,  
Princeton  
MEANS, RICHARD, Professor Emeritus, HHP, October, 1989. B.S., M.A., Minnesota; Ed.D., UCLA  
MERRITT, CLEMENTS B., Associate Professor Emeritus, Aerosp. Engr., September, 1988. B.M.E., Florida; M.S.A.E.,  
Air Force Inst. Tech  
MILLER, THOMAS E., Associate Professor Emeritus, Ed. Media, June, 1987. B.S., Berry; M.S., Stout St.; Ed.D.,  
Indiana  
MILLMAN, RICHARD G., Professor Emeritus, Architecture, October, 1989. B.Arch., M.Arch., Michigan  
MONTGOMERY, ROBERT W., Professor Emeritus, Voc. & Adult Ed., July, 1980. B.S., M.S., Auburn; Ph.D., Ohio St.  
MOORE, CLAUDE H., Professor Emeritus, Poultry Sci., July, 1989. B.S., Auburn; M.S., Kansas St.; Ph.D., Purdue  
MOORE, E. B., JR., Professor Emeritus, Ed. Administration, September, 1978. A.B., M.B.A., Syracuse; Ed.D., Florida  
MOORE, OMAR C., Associate Professor Emeritus, Chem. Engr., September, 1969. B.S., M.S., Auburn  
MORGAN, ALICE S., Associate Professor Emerita, Voc. & Adult Ed., December, 1986. B.S., S. Miss.; M.A., Alabama;  
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MORGAN, WILLIAM W., Professor Emeritus, Indust. Engr., January, 1982. B.B.A., Georgia; M.S., Ga. Tech  
MOSS, DONOVAN D., Professor Emeritus, FAA, March, 1989. B.S., M.S., Auburn; Ph.D., Georgia  
MOUNT, ROBERT H., Professor Emeritus, Zool. & Entomol., September, 1986. B.S., M.S., Auburn; Ph.D., Florida  
MYLES, WILLIAM R., Associate Professor Emeritus, Management, September, 1977. B.S., M.A., Pittsburgh  
NEAL, JESSE H., Professor Emeritus, Ag. Engr., August, 1967. B.S., Kansas St.; M.S., Minnesota; Ph.D., Missouri  
NEWTON, WESLEY P., Professor Emeritus, History, September, 1987. A.B., Missouri; M.A., Ph.D., Alabama  
NICHOLS, GROVER T., Associate Professor Emeritus, Elect. Engr., December, 1973. B.E.E., Auburn; M.S., Ga. Tech  
ORR, HENRY P., Professor Emeritus, Horticulture, September, 1981. B.S., Auburn; M.S., Ph.D., Ohio St.



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- PATTERSON, RICHARD M., Professor Emeritus, Bot., Pl. Path. and Microbiol., April, 1985. B.S., M.S., Florida; Ph.D., Penn. St.
- PATTERSON, TROY B., JR., Professor Emeritus, An. & Dairy Sci., March, 1986. B.S., Miss. St.; M.S., Ph.D., Texas A&M
- PEAK, J. HUNTER, Professor Emeritus, Foreign Lang., June, 1984. A.B., Hampden-Sydney; M.A., Ph.D., N. Carolina
- PEARSON, ALLEN M., Professor Emeritus, Zool.-Entomol., December, 1971. B.S., Auburn; M.S., Ph.D., Iowa St.
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- PERKINS, DONALD Y., Professor Emeritus, Department Head Emeritus, Horticulture, January, 1986. B.S., M.S., LSU; Ph.D., Cornell
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- PFEIL, EVA, Professor Emerita, Indust. Des., June, 1988. B.I.D., M.V.C., Ulm Graduate School of Design; Certificate Psychology, Zurich; Ph.D., Walden
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- SPEER, WILLIAM A., Professor Emeritus, Architecture, June, 1980. B.S. Arch., Clemson; M.Arch., Rensselaer Tech
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DONALD BICE, County Agent, 1970, 1986. B.S., Auburn  
JEFFERY E. BUTLER, Assistant County Agent, 1988. B.S., M.Ag., Auburn  
AGNES C. FIELDS, Associate County Agent, 1981, 1988. B.S., Tuskegee; M.S., Montevallo  
WILMA RUFFIN, County Agent, 1982, 1985. M.S., Alabama

### **Shelby County – Columbiana**

LEE GRANT GOBER, County Agent-Coordinator, 1960, 1977. B.S., M.S., Auburn  
MICHAEL E. BRASFIELD, Assistant County Agent, 1988. B.S., Auburn  
RICKY COLQUITT, Assistant County Agent, 1988. B.S., Auburn  
ANGELA TREADAWAY, Associate County Agent, 1985, 1989. B.S., M.A.T., Montevallo  
PEGGY A. PRUCNAL, County Agent, 1969, 1981. B.S., M.S., Jacksonville State

### **St. Clair County – Pell City**

DOROTHY P. BRICE, County Agent-Coordinator, 1970, 1986. B.S., Alabama A&M; M.A.T., Montevallo  
DONNA M. DICKINSON, County Agent, 1978, 1986. B.S., N. Alabama  
DONALD LESTER, County Agent, 1973, 1982. B.S., M.Ed., Auburn

### **Sumter County – Livingston**

BOB G. SPEARS, County Agent-Coordinator, 1964, 1981. B.S., Oklahoma State; M.S., Tennessee  
WILLIE H. LAMPLEY, Assistant County Agent, 1986. B.S., Tuskegee; M.Ed., Alabama A&M  
DENISE R. SHIRLEY, Assistant County Agent, 1988. B.S., Auburn  
GLORIA R. STEINHILBER, County Agent, 1970, 1986. B.S., Montevallo

### **Talladega County – Talladega**

WANDA P. JURRIAANS, County Agent, 1965, 1976. B.S., Jacksonville State; M.A., Auburn  
JAMES R. WILLIAMS, Multi-County Agent, 1980, 1986. B.S., Auburn

### **Tallapoosa County – Dadeville**

JERRY G. HANKS, County Agent-Coordinator, 1970, 1982. B.S., M.S., Auburn  
NELDA B. MARTIN, County Agent, 1971, 1976. B.S., Alabama; M.A., Auburn

### **Tuscaloosa County – Tuscaloosa**

JO ANN H. COOK, County Agent-Coordinator, 1970, 1979. B.S., M.S., Alabama  
EVELYN BLACKMON, County Agent, 1965, 1983. B.S., Alabama A&M; M.A., Alabama  
COLBURN, CHRISTOPHER, Assistant County Agent, 1990. B.S., Auburn  
STANLEY W. FORD, County Agent, 1979, 1986. B.S., Auburn; M.S., Miss. State  
R. LLOYD WEATHERLY, Associate County Agent, 1984. B.S., Murray State; M.Ag., Miss. State  
VERA J. WILSON, County Agent, 1965, 1981. B.S., Alabama A&M

### **Walker County – Jasper**

D. RAY RICE, County Agent-Coordinator, 1974, 1986. B.S., M.S., Auburn  
CHERRY CARTER, Associate County Agent, 1982. B.S., Auburn  
RICHARD FORD, County Agent, 1981. B.S., M.Ed., Alabama A&M  
SHIRLEY WHITTEN, County Agent, 1981, 1986. B.S., Auburn; M.S., Alabama A&M

### **Washington County – Chatom**

THOMAS E. FULLER, County Agent-Coordinator, 1969, 1980. B.S., M.S., Auburn

PATRICIA ANN DICKEY, County Agent, 1968, 1976. B.S., Alabama

SARAH H. HAZEN, County Agent, 1964, 1976. B.S., Auburn

ARTHUR L. THREATT, Associate County Agent, 1980, 1987. B.S., Alabama A&M

### **Wilcox County – Camden**

BETTY B. HOLLINGER, County Agent-Coordinator, 1977, 1987. B.S., M.A.T., Montevallo

ELIZABETH F. BUTLER, Associate County Agent, 1982. B.S., M.A.T., Montevallo

DANIEL JONES, Associate County Agent, 1982, 1987. B.S., Tuskegee; M.S., Miss. State

### **Winston County – Double Springs**

JEAN P. WEST, County Agent-Coordinator, 1972, 1988. B.S., M.Ext.Ed., Alabama;

RICHARD A. WRIGHT, Assistant County Agent, 1977, 1987. B.S., Auburn

## **Engineering Experiment Station Staff**

**JAMES E. MARTIN, B.S., M.S., Ph.D., President**

**PAUL F. PARKS, B.S., M.S., Ph.D., Vice President for Research**

**WILLIAM F. WALKER, B.S., M.S., Ph.D., Dean of Engineering**

**LARRY D. BENEFIELD, B.S.C.E., M.S.C.E., Ph.D., Acting Director**

Dual roles are performed by faculty and staff of the College of Engineering who serve also as personnel of the Engineering Experiment Station.

## **Engineering Extension Service Staff**

**JAMES E. MARTIN, B.S., M.S., Ph.D., President**

**ANN E. THOMPSON, B.S., M.A., Ed.D., Vice President for Extension**

**WILLIAM F. WALKER, B.S., M.S., Ph.D., Dean of Engineering**

**JOSEPH S. BOLAND, III, B.E.E., M.S., Ph.D., Associate Dean for Off-Campus Instruction**

**JAMES F. O'BRIEN, JR., B.M.E., M.M.E., Director**

**J. LARRY SELLERS, B.S., Administrative Assistant**

**JAMES R. WILBANKS, B.M.E., M.M.E., Director, Auburn Office**

**ELIZABETH L. SMITH, B.S., Engineering Public Service Specialist, Auburn Office**

**A. HENRY AVERYT, B.M.E., M.S.I.M., Director, Birmingham Office**

**LUELLEN NAGLE, B.S.Ed., Engineering Public Service Specialist, Birmingham Office**

Dual roles are performed by faculty and staff of the College of Engineering who serve also as personnel of the Engineering Extension Service.



State Regulatory and  
Veterinary Services

State Regulatory Service

CHEMISTRY

State Chemical Laboratory

- JINKS, JOHN D., Director, 1968. B.S., Auburn  
OWEN, MARGIE E., Chemist II, 1972. B.S., M.A., N. Alabama  
CARMICHAEL, JOE G., Chemist II, 1980. B.S., Troy State  
DUNCAN, JUDITH, C., Chemist II, 1984. B.S., Philippines, M.S., Michigan  
THORNTON, ADRIAN, Chemist II, 1980. B.S., Tuskegee Institute  
BOULWARE, PAUL, Chemist II, 1970. B.S., M.S., Auburn  
ADCOCK, BOBBY W., Chemist II, 1975. B.S., Auburn  
ELSTON, PRISCILLA ANN, Laboratory Technician II, 1985. B.S., Jacksonville  
State  
ANDREWS, DEFOREST WILLIAM, Chemist I, 1980. B.S., Jacksonville State  
MOORE, EVERETT DAVID, Laboratory Technician I, 1982. B.S., Auburn  
GREGORY, BARBARA S., Clerk Steno III, 1963.

C.S. Roberts Veterinary Diagnostic Laboratory

(Conducted in cooperation with the Alabama Department of Agriculture and Industries  
& The USDA, Agricultural Research Service.)

- VAUGHAN, JOHN T., Dean (School of Veterinary Med.), 1974, 1977. D.V.M.,  
M.S., Auburn  
ALLEY, J. LEE, State Veterinarian, 1977. D.V.M., Auburn  
HOERR, FRED, Director, State Diagnostic Laboratory, 1987. D.V.M., Ph.D.,  
Purdue  
D'ANDREA, GEORGE, Diagnostic Specialist, D.V.M., M.S., Auburn  
LAUERMAN, LLOYD, Diagnostic Specialist, D.V.M., Washington State; Ph.D.,  
Wisconsin

**Enrollment Statistics**  
**TABLE I – Enrollment By Curriculum**  
**Fall Quarter, 1990**

**COLLEGE OF AGRICULTURE**

Curriculum	Undergraduate		Graduate		Total
	Male	Female	Male	Female	
Agric. Business and Economics (AEC) (ECA) .....	71	16	17	6	110
Agricultural Engineering (AN) .....	—	—	9	1	10
Agricultural Journalism (AJ) .....	1	1	—	—	2
Agricultural Science (AG) .....	17	—	—	—	17
Agronomy and Soils (AY) .....	18	9	36	5	68
Animal and Dairy Sciences (ADS) (ADPV) .....	80	103	25	5	213
Entomology (ENT) .....	2	1	8	1	12
Fisheries and Allied Aqua. (FAA) .....	26	6	82	10	124
Horticulture (HF) .....	71	19	7	7	104
Integrated Pest Management (IPM) .....	5	2	—	—	7
Landscape and Ornamental Horticulture (OH) .....	1	4	—	—	5
Plant Pathology (PLP) .....	—	—	12	5	17
Poultry Science (PH) (PHPV) .....	35	5	9	5	54
Rural Sociology (RSY) .....	1	—	—	—	1
<b>TOTAL AGRICULTURE</b> .....	<b>328</b>	<b>166</b>	<b>205</b>	<b>45</b>	<b>744</b>

**SCHOOL OF ARCHITECTURE**

Architecture (AR) (ARS) .....	265	78	—	—	343
Building Science (BSC) .....	155	11	—	—	166
Community Planning (CP) .....	—	—	5	4	9
Industrial Design (IND) .....	72	12	3	—	87
Interior Design (ID) (IDS) .....	11	57	—	—	68
Landscape Architecture (LA) (LAS) .....	53	16	—	—	69
Pre-Architecture (PAR) .....	160	49	—	—	209
Pre-Building Science (PBSC) .....	120	3	—	—	123
Pre-Industrial Design (PIND) .....	38	3	—	—	41
Pre-Interior Design (PID) .....	—	14	—	—	14
Pre-Landscape Architecture (PLA) .....	7	1	—	—	8
<b>TOTAL ARCHITECTURE</b> .....	<b>881</b>	<b>244</b>	<b>8</b>	<b>4</b>	<b>1,137</b>

**COLLEGE OF BUSINESS**

Accountancy (AC) .....	170	193	13	12	388
Business Administration (BA) .....	7	4	143	67	221
Economics (EC) (ECB) .....	15	4	33	9	61
Finance (FI) .....	215	63	—	—	278
General Business - Theatre (GBT) .....	1	1	—	—	2
Human Resources Management (HRMN) .....	9	20	—	—	29
International Business (IB) .....	68	123	—	—	191
Management Information Systems (MIS) .....	50	34	—	2	86
Management (MN) .....	93	53	23	7	176
Marketing (MK) .....	221	189	—	—	410
Operations Management (OM) .....	46	7	—	—	53
Pre-Business (PB) .....	1,306	922	—	—	2,228
Transportation (TN) .....	35	8	—	—	43
<b>TOTAL BUSINESS</b> .....	<b>2,236</b>	<b>1,621</b>	<b>212</b>	<b>97</b>	<b>4,166</b>

## COLLEGE OF EDUCATION

Curriculum	Undergraduate		Graduate		Total
	Male	Female	Male	Female	
Adult Education (VAD) .....	46	8	5	—	59
Agricultural Education (VAG) .....	40	—	10	—	50
Behavior Disturbance Education (RSB) .....	1	18	1	3	23
Business Education (VBU) .....	—	18	—	5	23
Community Agency Counseling (CCA) .....	—	—	12	23	35
Counseling Psychology (COP) .....	—	—	9	12	21
Counselor Education (CCP) (CED) .....	—	—	9	14	23
Curriculum and Instruction (ACI) .....	—	—	2	5	7
Curriculum Supervision (ASC) .....	—	—	—	3	3
Distributive Education (VDE) .....	2	4	—	2	8
Early Childhood Education (CEC) .....	1	263	—	14	278
Early Childhood Education for the Handicapped (RSC) .....	1	39	—	8	48
Educational Leadership (AED) .....	—	—	1	1	2
Elementary Education (CEE) .....	12	358	3	39	412
Elementary/Secondary Admin. (AES) .....	—	—	13	15	28
Exercise Science (HES) .....	25	30	—	—	55
General Education (GED) .....	—	1	—	—	1
Health Education (HHE) .....	—	—	—	1	1
Health & Human Performance (HHP) .....	3	2	4	1	10
Human Movement Studies (HPE) .....	8	2	28	22	60
Health, Physical Education & Recreation (HPR) .....	1	—	1	1	3
Health Promotion (HEP) .....	16	43	—	—	59
Higher Educ. Admin. (AHE) (AHM) .....	—	—	11	13	24
Home Economics Education (VHE) .....	—	7	—	2	9
Industrial Arts Education (VIA) .....	3	—	1	—	4
Learning Disabilities (RSL) .....	—	—	1	15	16
Media Instructional Development (MID) .....	—	—	2	3	5
Media Specialist (MSE) .....	—	—	3	12	15
Mental Retardation Education (RSM) .....	2	19	—	—	21
Middle School - English (CME) .....	1	—	—	—	1
Music Education (CNM) .....	13	18	8	6	45
N-12 Physical Education (HPEN) .....	36	26	—	—	62
Office Administration (VOA) .....	—	2	—	—	2
Public School Counseling (CPS) .....	—	—	1	9	10
Reading Specialist (CNR) .....	—	—	—	7	7
Recreation Administration (HRA) .....	—	1	—	—	1
Recreation & Sport Management (HRS) .....	22	11	—	—	33
Rehabilitation and Special Education (RSE) (RSH) (RSX) .....	1	2	3	10	16
Rehabilitation Counseling (CRC) .....	—	—	3	8	11
Rehabilitation Service Education (RSR) .....	2	41	10	8	61
School Psychology/Psychometry (CSP) .....	—	—	2	3	5
Secondary School - English (CSE) .....	6	71	5	16	98
Secondary School - Foreign Language (CSF) .....	1	15	—	—	16
Secondary School - Mathematics (CSM) .....	22	68	2	8	100
Secondary School - Science (CSC) .....	17	30	5	4	56
Secondary School - Social Science (CSS) .....	34	49	6	9	98
Speech Pathology Education (RSS) .....	—	85	—	—	85
Student Development (CSD) .....	—	—	6	16	22
Trade and Industrial Education (VTI) .....	3	3	1	—	7
Vocational and Adult Education (VED) .....	1	—	14	25	40
TOTAL EDUCATION .....	320	1,234	182	343	2,079

## COLLEGE OF ENGINEERING

Curriculum	Undergraduate		Graduate		Total
	Male	Female	Male	Female	
Aerospace Engineering (AE) .....	271	47	35	—	353
Agricultural Engineering (AN) .....	15	1	—	—	16
Aviation Management: #					
Airway Science Management (AMA) .....	10	2	—	—	12
Aviation Management (AM) .....	13	2	—	—	15
Basic Aviation Mgt. (AMN) .....	101	11	—	—	112
Professional Flight Mgt. (AMF) .....	26	3	—	—	29
Chemical Engineering (CHE) .....	121	64	66	11	262
Civil Engineering (CE) .....	252	35	59	8	354
Computer Engineering (CPE) .....	119	17	13	3	152
Computer Science (CS) .....	41	20	31	10	102
Electrical Engineering (EE) .....	546	75	87	9	717
Forest Engineering (FYE) .....	12	—	—	—	12
Geological Engineering (GE) .....	1	—	—	—	1
Industrial Engineering (IE) .....	93	59	54	5	211
Manufacturing Systems Engr. (MFE) .....	—	—	24	2	26
Materials Engineering (MTL) .....	38	7	48	12	105
Mechanical Engineering (ME) .....	356	33	96	6	491
Pre-Aerospace Engineering (PAE) .....	187	44	—	—	231
Pre-Agricultural Engineering (PAN) .....	2	—	—	—	2
Pre-Aviation Management (PAM) .....	80	4	—	—	84
Pre-Chemical Engineering (PCHE) .....	88	46	—	—	134
Pre-Civil Engineering (PCE) .....	74	19	—	—	93
Pre-Computer Engineering (PCPE) .....	40	10	—	—	50
Pre-Computer Science (PCPS) .....	29	17	—	—	46
Pre-Electrical Engineering (PEE) .....	184	30	—	—	214
Pre-Engineering (PN) .....	145	45	—	—	190
Pre-Forestry Engineering (PFYE) .....	3	—	—	—	3
Pre-Geological Engineering (PGE) .....	1	—	—	—	1
Pre-Industrial Engineering (PIE) .....	22	11	—	—	33
Pre-Materials Engineering (PMTL) .....	6	3	—	—	9
Pre-Mechanical Engineering (PME) .....	129	12	—	—	141
Pre-Textile Chemistry (PTC) .....	4	5	—	—	9
Pre-Textile Engineering (PTE) .....	26	13	—	—	39
Pre-Textile Mgt. and Tech. (PTMT) .....	6	3	—	—	9
Textile Chemistry (TC) .....	6	3	—	—	9
Textile Engineering (TE) .....	13	7	—	—	20
Textile Mgt. and Technology (TMT) .....	12	10	—	—	22
TOTAL ENGINEERING .....	3,072	658	513	66	4,309

## SCHOOL OF FORESTRY

Forest Products (FP) .....	10	—	1	—	11
Forest Management (FY) .....	105	3	17	3	128
TOTAL FORESTRY .....	115	3	18	3	139

## SCHOOL OF HUMAN SCIENCES

Clothing and Textiles (CT) .....	3	10	—	—	13
Consumer Affairs (CA) .....	—	—	—	7	7
Consumer and Family Economics (CFE) .....	2	7	—	—	9
Coordinated Dietetics (CDP) .....	—	11	—	—	11
Family and Child Development (FCD) .....	16	121	10	29	176
Family Resources Management (FRM) .....	—	2	—	—	2
Fashion Merchandising (FM) .....	—	142	—	—	142
Apparels & Textiles (ATP) .....	—	16	—	—	16
Food Science (FS) .....	—	5	—	—	5

# Enrollment Statistics

Curriculum	Undergraduate		Graduate		Total
	Male	Female	Male	Female	
Hotel and Restaurant Mgt. (HRM) .....	43	57	—	—	100
Housing (HS) .....	—	1	—	—	1
Interiors & Housing (IH) .....	1	133	—	—	134
Nutrition and Foods (NF) .....	6	48	3	13	70
TOTAL HUMAN SCIENCES .....	71	553	13	49	686

## COLLEGE OF LIBERAL ARTS

Child Care Social Work (CSW) .....	2	21	—	—	23
Communication (COM) .....	—	—	15	21	36
Communication Disorders (CD) .....	1	5	2	26	34
Criminal Justice (CJ) .....	112	37	—	—	149
Criminology (SCR) .....	52	31	—	—	83
English (EH) .....	—	—	11	30	41
Foreign Language - International Trade (FLT) .....	20	64	—	—	84
French (FLF) .....	—	—	4	9	13
Spanish (FLS) .....	—	—	4	18	22
Spanish - Social Work (FSW) .....	—	1	—	—	1
General Curriculum - Anthropology (GAN) .....	10	10	—	—	20
General Curriculum - Art (GAT) .....	9	15	—	—	24
General Curriculum - Communication Disorders (GCD) .....	41	81	—	—	122
General Curriculum - Economics (GEC) .....	139	25	—	—	164
General Curriculum - English (GEH) .....	62	92	—	—	154
General Curriculum - Foreign Language (GFL) .....	10	28	—	—	38
General Curriculum - Geography (GGY) .....	55	18	—	—	73
General Curriculum - History (GHY) .....	109	51	—	—	160
General Curriculum - Journalism (GJM) .....	41	64	—	—	105
General Curriculum - Philosophy (GPA) .....	9	5	—	—	14
General Curriculum - Political Science (GPO) .....	118	68	—	—	186
General Curriculum - Psychology (GPG) .....	122	312	—	—	434
General Curriculum - Religion (GRL) .....	4	4	—	—	8
General Curriculum - Radio, Television & Film (GRTF) .....	30	46	—	—	76
General Curriculum - Social Work (GSW) .....	5	43	—	—	48
General Curriculum - Sociology (GSY) .....	7	15	—	—	22
General Curriculum - Communication (GCOM) .....	44	71	—	—	115
General Curriculum - Theatre (GTH) .....	12	27	—	—	39
General Curriculum - Undeclared (GLA) .....	740	588	—	—	1,328
Health Administration (HA) .....	13	24	—	—	37
Health Services Adm. (HSA) .....	9	7	—	—	16
Health Systems Adm. (HSM) .....	2	5	—	—	7
History (HY) .....	—	—	47	21	68
Political Science (PO) .....	—	—	9	3	12
Pre-Law (PL) .....	162	142	—	—	304
Psychology (PG) .....	—	—	36	60	96
Public Administration (PUB) .....	23	22	20	12	77
Public Relations - Communication (PRCM) .....	63	176	—	—	239
Public Relations - Journalism (PRJ) .....	20	64	—	—	84
Radio, Television & Film (RTF) .....	4	1	4	2	11
School of Fine Arts					
Art (AT) .....	—	—	1	1	2
Music (MU) .....	13	19	4	5	41
Theatre (TH) .....	1	3	—	—	4
Visual Arts (VAT) .....	143	156	—	—	299
TOTAL LIBERAL ARTS .....	2,207	2,341	157	208	4,913



## SCHOOL OF NURSING

Curriculum	Undergraduate		Graduate		Total
	Male	Female	Male	Female	
Nursing (NUR) .....	10	105	—	—	115
Pre-Nursing (NS) .....	8	124	—	—	132
TOTAL NURSING .....	18	229	—	—	247

## SCHOOL OF PHARMACY

Doctor of Pharmacy (PYD) .....	1	—	—	—	1
Pharmacy (PY) (PYS) .....	88	197	21	14	320
Pharmacy Care Systems (PCS) .....	—	—	1	3	4
TOTAL PHARMACY .....	89	197	22	17	325

## COLLEGE OF SCIENCES AND MATHEMATICS

Applied Mathematics (AMH) .....	69	43	—	—	112
Applied Physics (APS) .....	22	3	—	—	25
Biochemistry (BCH) .....	10	7	—	—	17
Botany (BY) .....	1	—	5	2	8
Chemistry (CH) .....	13	9	37	27	86
General Curriculum - Biological Science (GBI) .....	1	1	—	—	2
General Curriculum - Chemistry (GCH) .....	1	—	—	—	1
General Curriculum - Mathematics (GMH) .....	4	3	—	—	7
General Curriculum - Microbiology (GMB) .....	—	1	—	—	1
General Curriculum - Undeclared (GSM) .....	134	74	—	—	208
Geology (GL) .....	16	4	13	3	36
Laboratory Technology (LT) .....	5	10	—	—	15
Marine Biology (MRB) .....	34	43	—	—	77
Mathematics (MH) .....	27	22	49	32	130
Medical Technology (MDT) .....	10	15	—	—	25
Microbiology (MB) .....	39	34	6	5	84
Molecular Biology (MOB) .....	7	12	—	—	19
Physics (PS) .....	38	9	38	6	91
Pre-Dentistry (PD) .....	30	19	—	—	49
Pre-Medicine (PM) .....	233	173	—	—	406
Pre-Occupational Therapy (OT) .....	1	9	—	—	10
Pre-Optometry (OP) .....	16	15	—	—	31
Pre-Pharmacy (PPY) .....	102	200	—	—	302
Pre-Physical Therapy (PT) .....	26	100	—	—	126
Pre-Veterinary Medicine (PV) .....	69	125	—	—	194
Wildlife Science (WL) .....	66	26	15	6	113
Zoology (ZY) .....	18	18	26	13	75
TOTAL SCIENCES AND MATHEMATICS .....	992	975	189	94	2,250

## COLLEGE OF VETERINARY MEDICINE

Large Animal Surgery and Medicine (VLA) .....	—	—	3	3	6
Pathobiology (VPB) .....	—	—	3	8	11
Physiology and Pharmacology (VPH) .....	—	—	2	3	5
Radiology (VR) .....	—	—	—	3	3
Small Animal Surgery and Medicine (VSA) .....	—	—	6	2	8
Veterinary Medicine (VM) .....	183	165	10	8	366
TOTAL VETERINARY MEDICINE .....	183	165	24	27	399

## INTERDEPARTMENTAL PROGRAMS

Curriculum	Undergraduate		Graduate		Total
	Male	Female	Male	Female	
Environmental Science (ENS) .....	32	14	—	—	46
Nutrition (NN) .....	—	—	2	1	3
Physiology (IP) .....	—	—	4	3	7
Sociology (SY) .....	—	—	5	6	11
Textile Science (TS) .....	—	—	3	—	3
TOTAL INTERDEPARTMENTAL .....	32	14	14	10	70

## TRANSIENTS AND AUDITORS

Transients and Auditors (AUD) (TR) .....	26	23	11	13	73
TOTAL TRANSIENTS AND AUDITORS .....	26	23	11	13	73

## ALL UNIVERSITY

GRAND TOTAL	10,570	8,423	1,568	976	21,537
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## SUMMARY BY CLASS LEVEL

Freshmen .....	2,544	2,152	—	—	4,696
Sophomores .....	2,712	2,077	—	—	4,789
Juniors .....	2,526	2,063	—	—	4,589
Seniors .....	2,547	1,943	—	—	4,490
Fifth Year .....	132	98	—	—	230
Other Undergraduates .....	109	90	—	—	199
Master's .....	—	—	990	681	1,671
Educational Specialists .....	—	—	2	8	10
Doctoral .....	—	—	545	251	796
Other Graduates .....	—	—	31	36	67
GRAND TOTAL .....	10,570	8,423	1,568	976	21,537

TABLE II – Enrollment By Alabama Counties

Fall Quarter, 1990

County	Male	Female	Total
Autauga .....	93	67	160
Baldwin .....	205	155	360
Barbour .....	60	62	122
Bibb .....	1	4	5
Blount .....	29	38	67
Bullock .....	16	10	26
Butler .....	39	33	72
Calhoun .....	187	107	294
Chambers .....	109	132	241
Cherokee .....	36	18	54
Chilton .....	28	20	48
Choctaw .....	12	5	17
Clarke .....	43	36	79
Clay .....	32	22	54
Cleburne .....	19	16	35
Coffee .....	119	120	239
Colbert .....	44	36	80
Conecuh .....	23	16	39
Coosa .....	11	11	22
Covington .....	78	60	138
Crenshaw .....	21	20	41
Cullman .....	91	56	147
Dale .....	92	76	168
Dallas .....	63	58	121
DeKalb .....	58	39	97
Elmore .....	86	80	166
Escambia .....	73	56	129
Etowah .....	180	116	296
Fayette .....	13	14	27
Franklin .....	28	10	38
Geneva .....	44	45	89
Greene .....	2	2	4
Hale .....	8	4	12
Henry .....	41	24	65
Houston .....	230	160	390
Jackson .....	71	54	125
Jefferson .....	1,098	942	2,040
Lamar .....	8	6	14
Lauderdale .....	100	59	159
Lawrence .....	16	13	29
Lee .....	854	737	1,591
Limestone .....	72	45	117
Lowndes .....	11	16	27
Macon .....	34	46	80
Madison .....	625	483	1,108
Marengo .....	42	25	67
Marion .....	25	22	47
Marshall .....	112	70	182
Mobile .....	389	291	680
Monroe .....	39	33	72
Montgomery .....	527	454	981
Morgan .....	184	111	295
Perry .....	11	5	16
Pickens .....	11	7	18
Pike .....	39	31	70

# Enrollment Statistics

County	Male	Female	Total
Randolph .....	59	62	121
Russell .....	87	93	180
St. Clair .....	50	41	91
Shelby .....	146	136	282
Sumter .....	2	3	5
Talladega .....	119	93	212
Tallapoosa .....	123	138	261
Tuscaloosa .....	31	34	65
Walker .....	31	20	51
Washington .....	11	12	23
Wilcox .....	18	21	39
Winston .....	20	12	32
TOTAL .....	7,179	5,843	13,022

## TABLE III – Enrollment By States And Territories

Fall Quarter, 1990

State	Male	Female	Total
Alaska .....	3	3	6
Arizona .....	12	2	14
Arkansas .....	48	24	72
California .....	58	33	91
Colorado .....	19	18	37
Connecticut .....	28	14	42
Delaware .....	7	7	14
Florida .....	962	809	1,771
Georgia .....	1,397	1,196	2,593
Hawaii .....	4	1	5
Idaho .....	7	1	8
Illinois .....	60	58	118
Indiana .....	21	23	44
Iowa .....	3	4	7
Kansas .....	6	6	12
Kentucky .....	153	108	261
Louisiana .....	132	98	230
Maine .....	4	3	7
Maryland .....	72	47	119
Massachusetts .....	21	7	28
Michigan .....	34	20	54
Minnesota .....	10	1	11
Mississippi .....	73	64	137
Missouri .....	26	17	43
Montana .....	5	7	12
Nebraska .....	5	3	8
Nevada .....	8	1	9
New Hampshire .....	12	5	17
New Jersey .....	58	32	90
New Mexico .....	8	6	14
New York .....	102	37	139
North Carolina .....	88	40	128
Ohio .....	56	40	96
Oklahoma .....	14	10	24
Oregon .....	2	4	6
Pennsylvania .....	62	41	103

# Enrollment Statistics

State	Male	Female	Total
Rhode Island .....	8	1	9
South Carolina .....	163	83	246
South Dakota .....	8	—	8
Tennessee .....	403	290	693
Texas .....	100	72	172
Utah .....	11	4	15
Vermont .....	2	1	3
Virginia .....	128	102	230
Washington .....	15	10	25
West Virginia .....	8	12	20
Wisconsin .....	12	9	21
Wyoming .....	1	2	3
TOTAL - Other States .....	4,439	3,376	7,815
TOTAL - All States .....	11,618	9,219	20,837

## United States Territories and Possessions

Puerto Rico .....	2	2	4
Virgin Islands .....	1	—	1
TOTAL - U.S. Territories and Possessions .....	3	2	5

TABLE IV – Enrollment By Foreign Country  
Fall Quarter, 1990

Foreign Country	Male	Female	Total
Argentina .....	—	1	1
Australia .....	1	1	2
Austria .....	—	1	1
Bahamas .....	1	—	1
Bangladesh .....	3	—	3
Belgium .....	—	1	1
Bolivia .....	1	—	1
Brazil .....	3	2	5
Burundi .....	1	—	1
Cameroon .....	1	—	1
Canada .....	15	12	27
China (PRC) .....	64	27	91
Colombia .....	3	1	4
Congo .....	1	—	1
Costa Rica .....	1	1	2
Egypt .....	11	1	12
El Salvador .....	1	—	1
France .....	2	4	6
Germany .....	2	2	4
Greece .....	1	—	1
Guatemala .....	3	1	4
Guyana .....	—	1	1
Honduras .....	—	1	1
Hong Kong .....	4	3	7
India .....	100	13	113
Indonesia .....	11	1	12
Iran .....	1	2	3
Israel .....	1	—	1
Italy .....	1	—	1
Ivory Coast .....	3	—	3



# Enrollment Statistics

Foreign Country	Male	Female	Total
Jamaica .....	4	3	7
Jordan .....	1	—	1
Japan .....	7	4	11
Kenya .....	1	1	2
Korea .....	31	2	33
Lebanon .....	3	—	3
Liberia .....	1	—	1
Malawi .....	1	—	1
Malaysia .....	5	3	8
Mali .....	4	—	4
Mexico .....	3	—	3
Morocco .....	2	—	2
Nepal .....	4	1	5
Netherlands .....	3	—	3
Nicaragua .....	1	—	1
Nigeria .....	8	—	8
Pakistan .....	5	—	5
Panama .....	—	2	2
Peru .....	1	—	1
Philippine Islands .....	—	4	4
Portugal .....	—	1	1
Rwanda .....	1	—	1
Saudi Arabia .....	1	—	1
Singapore .....	1	—	1
South Africa .....	3	—	3
Spain .....	3	1	4
Sri Lanka .....	3	2	5
Sweden .....	2	1	3
Syria .....	1	—	1
Taiwan .....	150	60	210
Thailand .....	9	4	13
Togo .....	1	—	1
Trinidad .....	3	—	3
Turkey .....	3	2	5
Uganda .....	3	—	3
United Kingdom .....	7	8	15
Uruguay .....	1	—	1
Venezuela .....	—	1	1
Vietnam .....	1	—	1
West Indies .....	—	1	1
Yugoslavia .....	2	1	3
Zaire .....	1	—	1
TOTAL (Foreign) .....	517	178	695

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